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# Air Quality Data Handling System (AQDHS-II) Test Run Series Documentation
Second Edition

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Research Triangle Park, NC

Prepared for

Environmental Protection Agency
Research Triangle Park, NC

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This manual documents the AQDHS-II test run series and replaces the Air Pollution Training Institute Manual 475, Comprehensive Data Handling System, Volume 2, Air Quality Data Handling System (AQDHS-II).

The test run series is divided into two major areas: basic test runs and ad hoc test runs. The basic test runs exercise each program in AQDHS-II at least once and provide the user with a means of determining whether or not his installation of AQDHS-II has been successful.

The ad hoc test runs further exercise the capabilities of the AQDHS-II programs. The ad hoc test runs also provide the user with examples of how various combinations of AQDHS-II programs may be used to generate certain reports or to accomplish special tasks.

The AQDHS-II User's Guide should be used as a reference in conjunction with this manual. Appendix A of this manual provides a cross-reference of tests, procedures, and programs.

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## SECOND EDITION

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# Air Quality Data Handling System (AQDHS-II) Test Run Series Documentation

## SECOND EDITION

by

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November 1980

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This edition of the Air Quality Data Handling System (AQDHS-II) Test Run Series Documentation includes any documentation revisions through Update 27.

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The development of this manual documenting the AQDHS-II test run series has been largely a team effort between RTI and Mr. Lloyd M. Hedgepeth of EPA/NADB.

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# INTRODUCTION

The purpose of this manual is to document the AQDHS-II test run series released by the Environmental Protection Agency, as part of the AQDHS-II installation package. This document replaces Air Pollution Training Institute Manual 475, Comprehensive Data Handling System, Volume 2, Air Quality Data Handling System (AQDHS-II).

The test run series is divided into two major areas: basic test runs and ad hoc test runs. The basic test runs exercise each program in AQDHS-II at least once and provide the user with a means of determining whether or not his installation of AQDHS-II has been successful.

The ad hoc test runs further exercise the capabilities of the AQDHS-II programs. The ad hoc test runs also provide the user with examples of how various combinations of AQDHS-II programs may be used to generate certain reports or to accomplish special tasks.

The AQDHS-II User's Guide should be used as a reference in conjunction with this manual. Appendix A of this manual provides a cross-reference of test, procedures, and programs.

## AQDHS-II TEST 1

### Create and Print the Parameter File

In this test run, an initial AQDHS-II parameter file is created using the cataloged procedure AQEMP10 which executes ASRPARM (AQ0150), the parameter file transaction sort program; and AEMPARM (AQ0070), the parameter file maintenance program. The cataloged procedure AQRPP10 is then used to produce a formatted listing of the parameter file by executing ARPPARM (AQ0240), the parameter file detailed report program.

ASRPARM (AQ0150) sorts the parameter file transactions (see Figure AQT1-1 for the transaction formats) into the sequence required by AEMPARM (AQ0070). The fields of each transaction are sorted in the following order:

| Columns | Description | Sort Order |
|---|---|---|
| 2 - 6 | Parameter Code | Ascending |
| 7 - 8 | Method Code | Ascending |
| 9 - 10 | Unit Code | Ascending |
| 80 | Action Code | Ascending |
| 1 | Card Type | Ascending |

All parameter file transactions _must_ be sorted by ASRPARM (AQ0150) before they can be used to create the parameter file.

AEMPARM (AQ0070) creates and maintains a fixed-length, sequential file containing the valid parameter, method, and unit code combinations and their descriptions. The parameter file must contain a record for a parameter, method, and unit code combination before readings for that combination can be placed in the AQDHS-II master file.

The input parameter file transactions can consist of three types: card type 1, card type 2, and card type 3. Refer to Figure AQT1-1 for the parameter file transaction formats and to Figure AQT1-2 for the parameter file transaction load sheet. The creation of a parameter file record requires a complete set of these three transaction types all having identical parameter, method, and unit code combinations, and an action code of 'A'. Also, every field in these cards, with the exception of the two user units fields, must contain valid, non-blank data.

The options in this program are used to specify whether or not the warning-level error messages are to appear in the diagnostic report and if the input transaction file, input parameter file, and output parameter file are to be printed. In order to have the warning-level messages printed in the diagnostic report, the word FLAGW must begin in column 1 of the option card. Otherwise, the word NOFLAGW or any other value except FLAGW beginning in card column 1 will suppress these messages. If the input and output files are to be printed, the word LIST must begin in column 9 of the option card. However, if these files are not to be printed, the word NOLIST or any other word except LIST should begin in card column 9. The default values of NOFLAGW and NOLIST will be used to control printing when an option card is not present in the run stream.

ARPPARM (AQ0240) prints the parameter file in a columnized format which includes headings and a footnote feature. The content of each parameter file record is listed on two print lines.

The run stream for this test run contains the JCL necessary for creating an AQDHS-II parameter file and producing a formatted listing of this file. This run stream is shown in Figure AQT1-3. It does not show all the input parameter file transactions in the run stream, but does show the necessary JCL.

First, the run stream executes the cataloged procedure AQEMP10. Since this test run creates the initial AQDHS-II parameter file, there is obviously not an input parameter file to be accessed. This is why the old parameter file AQSOLDPR must be a dummy file in the UPDATE step. Through the use of a substitutable parameter, the new parameter file is named AQPARM01. The user must supply the DD (data definition) information for the option card file in the UPDATE step and for the input parameter transaction file in the SORT step. The options specified in the UPDATE step of this test run are NOFLAGW and

NOLIST. Refer to Figure AQT1-4 for the sample output produced by this procedure.

Next, the cataloged procedure AQRPP10 is executed to produce a formatted listing. A substitutable parameter is used to specify AQPARM01 as the input parameter file. The sample output produced by this procedure is shown in Figure AQTI-5.

Card 1

| Columns | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Card Type (value is 1) |
| 2 - 6 | 5 | Numeric | Parameter Code |
| 7 - 8 | 2 | Numeric | Method Code |
| 9 - 10 | 2 | Numeric | Units Code |
| 11 | 1 | Numeric | Minimum Detectable* Decimal Code |
| 12 - 15 | 4 | Numeric | Minimum Detectable |
| 16 - 45 | 30 | Alphanumeric | Parameter Description |
| 46 - 70 | 25 | Alphanumeric | Collection Method |
| 71 - 79 | 9 | | Unused |
| 80 | 1 | Alphabetic | Action Code |

---

*If the minimum detectable value is negative it must adhere to the following format: -ddd where d is any digit 0-9. The minimum detectable value must be expressed in the units specified by the units code in columns nine and 10.

(Page 1 of 3)

Figure AQT1-1. Parameter File Transaction Formats

Card 2

| Columns | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Card Type (value is 2) |
| 2 - 6 | 5 | Numeric | Parameter Code |
| 7 - 8 | 2 | Numeric | Method Code |
| 9 - 10 | 2 | Numeric | Units Code |
| 11 - 35 | 25 | Alphanumeric | Analysis Method |
| 36 - 65 | 30 | Alphanumeric | Units Description |
| 66 - 79 | 14 |  | Unused |
| 80 | 1 | Alphabetic | Action Code |

(Page 2 of 3)

Figure AQT1-1 - continued. Parameter File Transaction Formats

Card 3

| Columns | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Card Type (value is 3) |
| 2 - 6 | 5 | Numeric | Parameter Code |
| 7 - 8 | 2 | Numeric | Method Code |
| 9 - 10 | 2 | Numeric | Units Code |
| 11 - 12 | 2 | Numeric | Standard Units Code |
| 13 - 21 | 9* | Numeric | Standard Units Conversion Factor |
| 22 - 23 | 2 | Numeric | User Units Code** |
| 24 - 32 | 9* | Numeric | User Units Conversion Factor** |
| 33 - 79 | 47 | | Unused |
| 80 | 1 | Alphabetic | Action Code |

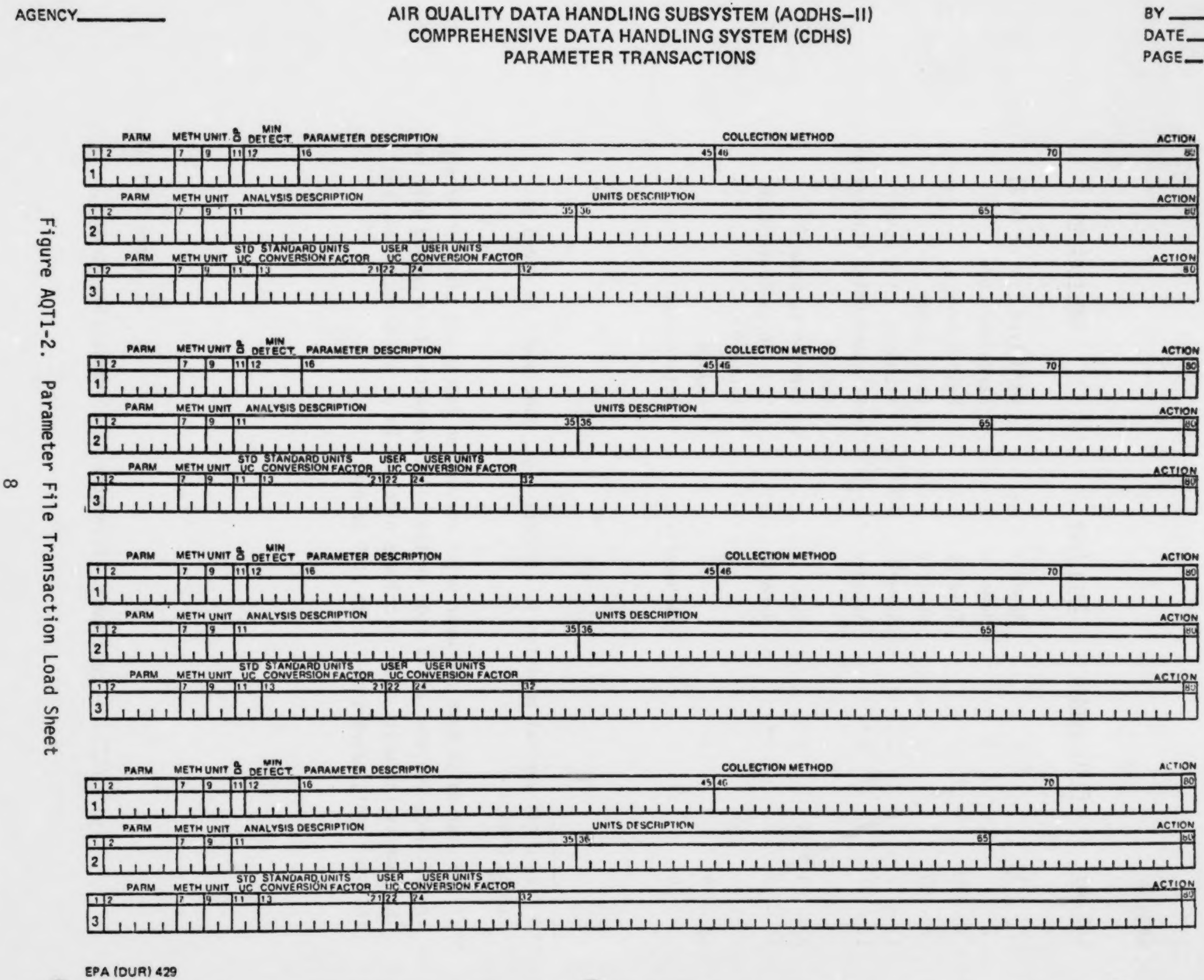
---

*A five-digit decimal position is assumed; e.g., 2.62 would be coded as '000262000'.

**If the user units code and user units conversion factor are blank on an add transaction, the user units code on the added parameter file record will be the same as the units code in columns nine and 10 of the transaction, and the user units conversion factor will be one.

(Page 3 of 3)

Figure AQT1-1 - continued. Parameter File Transaction Formats



AGENCY________

AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS–II)
COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)
PARAMETER TRANSACTIONS

BY ________
DATE ________
PAGE __ OF __

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | & | MIN DETECT | PARAMETER DESCRIPTION | COLLECTION METHOD | ACTION |
| 1 | 2 | 7 | 9 | 11 | 12 | 16 45 | 46 70 | 80 |
| 1 | | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | ANALYSIS DESCRIPTION | UNITS DESCRIPTION | ACTION |
| 1 | 2 | 7 | 9 | 11 35 | 36 65 | 80 |
| 2 | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | STD UC | STANDARD UNITS CONVERSION FACTOR | USER UC | USER UNITS CONVERSION FACTOR | | ACTION |
| 1 | 2 | 7 | 9 | 11 | 13 21 | 22 | 24 | 32 | 80 |
| 3 | | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | & | MIN DETECT | PARAMETER DESCRIPTION | COLLECTION METHOD | ACTION |
| 1 | 2 | 7 | 9 | 11 | 12 | 16 45 | 46 70 | 80 |
| 1 | | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | ANALYSIS DESCRIPTION | UNITS DESCRIPTION | ACTION |
| 1 | 2 | 7 | 9 | 11 35 | 36 65 | 80 |
| 2 | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | STD UC | STANDARD UNITS CONVERSION FACTOR | USER UC | USER UNITS CONVERSION FACTOR | | ACTION |
| 1 | 2 | 7 | 9 | 11 | 13 21 | 22 | 24 | 32 | 80 |
| 3 | | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | & | MIN DETECT | PARAMETER DESCRIPTION | COLLECTION METHOD | ACTION |
| 1 | 2 | 7 | 9 | 11 | 12 | 16 45 | 46 70 | 80 |
| 1 | | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | ANALYSIS DESCRIPTION | UNITS DESCRIPTION | ACTION |
| 1 | 2 | 7 | 9 | 11 35 | 36 65 | 80 |
| 2 | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | STD UC | STANDARD UNITS CONVERSION FACTOR | USER UC | USER UNITS CONVERSION FACTOR | | ACTION |
| 1 | 2 | 7 | 9 | 11 | 13 21 | 22 | 24 | 32 | 80 |
| 3 | | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | & | MIN DETECT | PARAMETER DESCRIPTION | COLLECTION METHOD | ACTION |
| 1 | 2 | 7 | 9 | 11 | 12 | 16 45 | 46 70 | 80 |
| 1 | | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | ANALYSIS DESCRIPTION | UNITS DESCRIPTION | ACTION |
| 1 | 2 | 7 | 9 | 11 35 | 36 65 | 80 |
| 2 | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PARM | METH | UNIT | STD UC | STANDARD UNITS CONVERSION FACTOR | USER UC | USER UNITS CONVERSION FACTOR | | ACTION |
| 1 | 2 | 7 | 9 | 11 | 13 21 | 22 | 24 | 32 | 80 |
| 3 | | | | | | | | | |

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Figure AQT1-2. Parameter File Transaction Load Sheet

```
//AQSTST01  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE,PRTY=1
//*PROCLIB=RTI.C44.PU2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PU2069.MCMASTER.DPR.DATA.AQPARM01,
// DISP=(OLD,DELETE)
//*
//* CREATE THE INITIAL PARAMETER FILE
//*
//TEST1A  EXEC AQEMP10,
//             PRIMARY=1,
//             SCNDARY=1,
//             OUT=A,
//             NEWPARM=AQPARM01
//*
//* SORT AND EDIT THE PARAMETER TRANSACTIONS;
//* THEN USE THEM TO BUILD THE PARAMETER FILE
//*
//SORT.INPUT DD *
111101910100001TOTAL SUSPENDED PARTICULATE   HI-VOL                             A
2111019101GRAVIMETRIC             U-GMS/M3 (25DEG C,1013 M-BARS)                A
311101910101000100000                                                           A
111101920210011TOTAL SUSPENDED PARTICULATE   MEMBRANE SAMPLE                    A
2111019202GRAVIMETRIC             U-GMS/M3 (0DEG C, 1013 M-BARS)                A
311101920201000091600                                                           A
111201810920001SOILING INDEX (COH/1000LF)    TAPE SAMPLER                       A
2112018109TRANSMITTANCE           COHS/1000 LINEAR FEET                         A
311201810901000100000                                                           A
121101519020143TOTAL SETTLED PARTICULATE     BUCKET; JAR                        A
2211015190GRAVIMETRIC             TONS/SQUARE MILE-MONTH                        A
321101519093000035030                                                           A
121101519120005TOTAL SETTLED PARTICULATE     BUCKET; JAR                        A
2211015191GRAVIMETRIC             M-GMS/SQUARE CENTIMETER-MONTH                 A
321101519193001000000                                                           A
121101719020143TOTAL SETTLED PARTICULATE     BUCKET; JAR                        A
2211017190GRAVIMETRIC (APCA)      TONS/SQUARE MILE-MONTH                        A
321101719093000035030                                                           A
121101719120005TOTAL SETTLED PARTICULATE     BUCKET; JAR                        A
2211017191GRAVIMETRIC (APCA)      M-GMS/SQUARE CENTIMETER-MONTH                 A
321101719193001000000                                                           A
121101819020143TOTAL SETTLED PARTICULATE     BUCKET; JAR                        A
2211018190GRAVIMETRIC (ASTM)      TONS/SQUARE MILE-MONTH                        A
321101819093000035030                                                           A
```

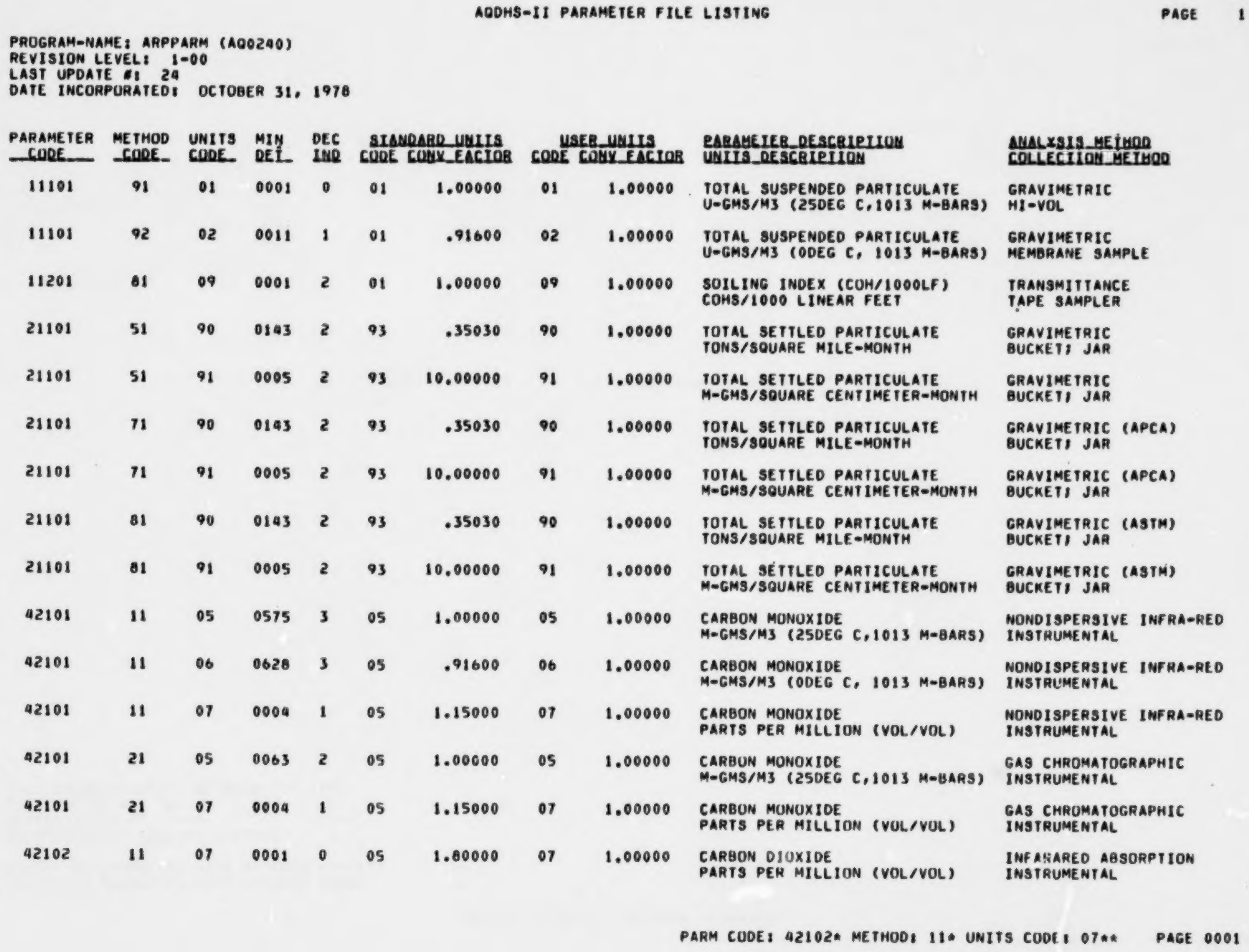
(Remainder of transactions omitted)

```
//UPDATE.AQSOLDPR DD DUMMY
//UPDATE.OPTINS DD *
NOFLAGW NOLIST
/*
//TEST1B EXEC AQRPP10,
//            PARMFIL=AQPARM01,
//            OUT=A
//*
//* PRINT THE PARAMETER FILE
```

Figure AQT1-3. Run Stream

```
                         AQDHS-II PARAMETER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE  1

PROGRAM NAME: ASRPARM (AQ0150)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT TRANSACTIONS:          267
NUMBER OF OUTPUT TRANSACTIONS:         267

------------------------------------------------------------------------------------------------------------------------



                    AQDHS-II PARAMETER FILE EDIT AND MAINTENANCE PROGRAM DIAGNOSTIC MESSAGES          PAGE     1
PROGRAM NAME: AEMPARM (AQ0070)
REVISION LEVEL: 1-00
INCORPORATED: OCTOBER 31, 1978
LAST UPDATE #: 24
OPTIONS IN EFFECT: NOFLAGW NOLIST

NUMBER OF INPUT PARAMETER FILE RECORDS:        0
NUMBER OF OUTPUT PARAMETER FILE RECORDS:      89
NUMBER OF INPUT TRANSACTION CARDS:           267
NUMBER OF VALID TRANSACTION CARDS:           267
NUMBER OF REJECTED TRANSACTION CARDS:          0
NUMBER OF DISASTER MESSAGES:                   0
NUMBER OF ABORT MESSAGES:                      0
NUMBER OF ERROR MESSAGES:                      0
NUMBER OF CONDITIONAL MESSAGES:                0
NUMBER OF WARNING MESSAGES                   174
```

Figure AQT1-4. Procedure AQEMP10 -- programs ASRPARM and AEMPARM



```
                                        AQDHS-II PARAMETER FILE LISTING                                              PAGE    1
PROGRAM-NAME: ARPPARM (AQ0240)
REVISION LEVEL:  1-00
LAST UPDATE #:  24
DATE INCORPORATED:  OCTOBER 31, 1978

PARAMETER  METHOD  UNITS  MIN   DEC    STANDARD UNITS      USER UNITS      PARAMETER DESCRIPTION              ANALYSIS METHOD
  CODE      CODE   CODE   DET   IND  CODE CONV FACTOR  CODE CONV FACTOR  UNITS DESCRIPTION                  COLLECTION METHOD

  11101      91     01    0001   0    01    1.00000     01    1.00000   TOTAL SUSPENDED PARTICULATE        GRAVIMETRIC
                                                                        U-GMS/M3 (25DEG C,1013 M-BARS)     HI-VOL

  11101      92     02    0011   1    01     .91600     02    1.00000   TOTAL SUSPENDED PARTICULATE        GRAVIMETRIC
                                                                        U-GMS/M3 (0DEG C, 1013 M-BARS)     MEMBRANE SAMPLE

  11201      81     09    0001   2    01    1.00000     09    1.00000   SOILING INDEX (COH/1000LF)         TRANSMITTANCE
                                                                        COHS/1000 LINEAR FEET              TAPE SAMPLER

  21101      51     90    0143   2    93     .35030     90    1.00000   TOTAL SETTLED PARTICULATE          GRAVIMETRIC
                                                                        TONS/SQUARE MILE-MONTH             BUCKET; JAR

  21101      51     91    0005   2    93   10.00000     91    1.00000   TOTAL SETTLED PARTICULATE          GRAVIMETRIC
                                                                        M-GMS/SQUARE CENTIMETER-MONTH      BUCKET; JAR

  21101      71     90    0143   2    93     .35030     90    1.00000   TOTAL SETTLED PARTICULATE          GRAVIMETRIC (APCA)
                                                                        TONS/SQUARE MILE-MONTH             BUCKET; JAR

  21101      71     91    0005   2    93   10.00000     91    1.00000   TOTAL SETTLED PARTICULATE          GRAVIMETRIC (APCA)
                                                                        M-GMS/SQUARE CENTIMETER-MONTH      BUCKET; JAR

  21101      81     90    0143   2    93     .35030     90    1.00000   TOTAL SETTLED PARTICULATE          GRAVIMETRIC (ASTM)
                                                                        TONS/SQUARE MILE-MONTH             BUCKET; JAR

  21101      81     91    0005   2    93   10.00000     91    1.00000   TOTAL SETTLED PARTICULATE          GRAVIMETRIC (ASTM)
                                                                        M-GMS/SQUARE CENTIMETER-MONTH      BUCKET; JAR

  42101      11     05    0575   3    05    1.00000     05    1.00000   CARBON MONOXIDE                    NONDISPERSIVE INFRA-RED
                                                                        M-GMS/M3 (25DEG C,1013 M-BARS)     INSTRUMENTAL

  42101      11     06    0628   3    05     .91600     06    1.00000   CARBON MONOXIDE                    NONDISPERSIVE INFRA-RED
                                                                        M-GMS/M3 (0DEG C, 1013 M-BARS)     INSTRUMENTAL

  42101      11     07    0004   1    05    1.15000     07    1.00000   CARBON MONOXIDE                    NONDISPERSIVE INFRA-RED
                                                                        PARTS PER MILLION (VOL/VOL)        INSTRUMENTAL

  42101      21     05    0063   2    05    1.00000     05    1.00000   CARBON MONOXIDE                    GAS CHROMATOGRAPHIC
                                                                        M-GMS/M3 (25DEG C,1013 M-BARS)     INSTRUMENTAL

  42101      21     07    0004   1    05    1.15000     07    1.00000   CARBON MONOXIDE                    GAS CHROMATOGRAPHIC
                                                                        PARTS PER MILLION (VOL/VOL)        INSTRUMENTAL

  42102      11     07    0001   0    05    1.80000     07    1.00000   CARBON DIOXIDE                     INFARARED ABSORPTION
                                                                        PARTS PER MILLION (VOL/VOL)        INSTRUMENTAL

                                                                 PARM CODE: 42102* METHOD: 11* UNITS CODE: 07**    PAGE 0001
```

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Figure AQT1-5.  Procedure AQRPP10 -- program ARPPARM

```
                                                  ARPPARM (AQ0240) SUMMARY MESSAGES
NUMBER OF PARAMETER FILE RECORDS READ:          89
NUMBER OF PARAMETER FILE RECORDS LISTED:        89

PROGRAM-NAME: ARPPARM (AQ0240)
REVISION LEVEL:  1-00
LAST UPDATE #:  24
DATE INCORPORATED:  OCTOBER 31, 1978
```

(Page 2 of 2)

Figure AQT1-5 - continued.  Procedure AQRPP10 -- program ARPPARM

## AQDHS-II TEST 2

### Create and Print the Site File

In this test run, an initial AQDHS-II site file is created using the cataloged procedure AQEMS10 which executes ASRSITE (AQ0160), the site file transaction sort program and AEMSITE (AQ0080), the site file maintenance program. The cataloged procedure AQRPS10 is then used to produce a formatted listing of the site file by executing ARPSITE (AQ0260), the site file detailed report program.

ASRSITE (AQ0160) sorts the site file transactions (see Figure AQT2-1 for the transaction format) into the sequence required by AEMSITE (AQ0080). The fields of each transaction are sorted in the following order:

| Columns | Description | Sort Order |
|---|---|---|
| 1 - 2 | State Code | Ascending |
| 3 - 6 | Area Code | Ascending |
| 7 - 9 | Site Code | Ascending |
| 10 | Agency Code | Ascending |
| 11 - 12 | Project Code | Ascending |
| 80 | Action Code | Ascending |
| 78 - 79 | Transaction Type | Ascending |

All site file transactions _must_ be sorted by ASRSITE (AQ0160) before they can be used to create the site file.

AEMSITE (AQ0080) creates and maintains a variable length, sequential file containing site information for each monitoring site. The site file must contain a record for a site before readings for that site can be placed on the AQDHS-II master file.

The input site file transactions can consist of 11 types: card type 01 through card type 11. Refer to Figure AQT2-1 for the site file transaction formats and Figure AQT2-2 for the site file transaction load sheet. The action code field on an incoming transaction determines whether the transaction is an add, change or delete transaction. Only card type 01 is required to add a site; card types 02 through card type 11 are optional. When the data in a site record is to be changed, only those card types containing the affected fields should appear. When deleting a site, only card type 01, with the site key information filled in, should be present. A single parameter of a site record can be deleted by coding a card type 11 as a delete.

The user may specify three different options on the control card of AEMSITE (AQ0080). The first option field, columns 1 through 6 of the card, contains the list option, which controls listing of the input and output files. The valid values are '  LIST' and 'NOLIST'; the latter value is the default. Note that these values must be right-justified in the option field ('LIST' must start in column 3). The second option field, in columns 9 through 15, controls the suppression of warning-level diagnostic messages. The valid values are '  FLAGW' and 'NOFLAGW'; the former causes warning messages to be printed, while the latter value, which is the default, suppresses these messages. Again the values should be right-justified in the field ('FLAGW' starts in column 11). The last option field, columns 17 and 18, specifies the maximum number of lines to be printed per page. The user should enter field a two-digit number between 01 and 85 inclusive; the default is 55 lines per page.

ARPSITE (AQ0260) lists the contents of the site file. Individual records are separated in the listing by double dashed lines. The site report format may be modified by several user options. The first control card field, columns 1 through 5, controls line suppression in the report listing. If the word 'FULL' is coded, beginning in column 1, all report lines are printed. If the word 'SHORT' is coded in this field, any report line that contains only blank fields from the site record is suppressed. The latter value is the default. The second control field, columns 7 and 8, specifies the maximum numbers of lines to be printed per page. The value must be between 40 and 99 inclusive. The default is 60 lines per page. The remaining two option fields determine which records are to appear in the report listing. One field, columns 10 through 13, specifies by number at which site record the listing is to begin. The other, columns 15 through 18, indicates how many records are to be listed. The defaults for these two options are to list the entire file beginning at the first record.

The run stream for this test run contains the JCL necessary for creating an AQDHS-II site file and producing a formatted listing of this file. This run stream is shown in Figure AQT2-3. It does not show all the input site file transactions, but does show the necessary JCL.

First, the run stream executes the cataloged procedure AQEMS10. Since this test run creates the initial AQDHS-II site file, there is obviously not an input site file to be accessed. This is why the old site file AQSOLDMS must be a dummy file in the UPDATE step. Through the use of a substitutable parameter, the new site file is named AQSITE01. The user must supply the DD (data definition) information for the input site transaction file in the SORT step. An option card is provided for the EDIT step. The user has chosen the 'FLAGW' option (which lists warning-level diagnostic messages) and a maximum of 80 lines per page. No option value is specified in the confirmation listing field so the default value of 'NOLIST' (input and output file listings suppressed) is used. Refer to Figure AQT2-4 for the sample output produced by this procedure.

Next, the cataloged procedure AQRPS10 is executed. A substitutable parameter is used to specify AQSITE01 as the input site file. The user has specified the 'SHORT' option on the option card in the PRINT step (suppression of report lines with only blank fields). He has also specified a maximum of 80 lines per page. The option fields for the first record printed and the number of records printed are blank, so all records of the site file are printed. See Figure AQT2-5 for output from this procedure.

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Type 01 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 15 | 3 | Numeric | AQCR Code | |
| 16 - 19 | 4 | Numeric | County Code | |
| 20 - 24 | 5 | Numeric | FIPS Code | |
| 25 | 1 | Alphanumeric | NAQTS ID | |
| 26 - 31 | 6 | Alphanumeric | AQMA Code | |
| 32 - 35 | 4 | Alphanumeric | SMSA Code | |
| 36 - 76 | 41 | Alphanumeric | Site Address | |
| 77 | 1 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (01) | |
| 80 | 1 | Alphabetic | Action Code (A, C or D) | |

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Figure AQT2-1. Site File Transaction Formats

Type 02 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 14 | 2 | Numeric | UTM Zone | |
| 15 - 22 | 8* | Numeric | UTM Easting Coordinate | |
| 23 - 29 | 7** | Numeric | UTM Northing Coordinate | |
| 30 - 31 | 2 | Alpabetic | Sector Code | |
| 32 | 1 | Alphabetic | Longitude Hemisphere | |
| 33 - 35 | 3 | Numeric | Longitude Degrees | |
| 36 - 37 | 2 | Numeric | Longitude Minutes | |
| 38 - 39 | 2 | Numeric | Longitude Seconds | |
| 40 | 1 | Alphabetic | Latitude Hemisphere | |
| 41 - 42 | 2 | Numeric | Latitude Degrees | |
| 43 - 44 | 2 | Numeric | Latitude Minutes | |
| 46 | 2 | Numeric | Latitude Seconds | |
| 47 - 49 | 3 | Numeric | Elevation Above Sea Level (Nearest 100 Feet) | |

---

* A four-position decimal code is assumed; e.g., 234.1 would be coded as '02341000'. Leading zeroes are not required, but trailing zeroes must be coded.

** A four-position decimal code is assumed; e.g., 59.8 would be coded as '0598000'. Leading zeroes are not required, but trailing zeroes must be coded.

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Figure AQT2-1 - continued. Site File Transaction Formats

Type 02 Transaction (continued)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 50 - 55 | 6 | Numeric | Date Commenced (MMDDYY) |
| 56 - 61 | 6 | Numeric | Last EPA Evaluation (MMDDYY) |
| 62 | 1 | Alphabeitc | Evaluating Agency Type |
| 63 - 68 | 6 | Numeric | Last EPA Audit (MMDDYY) |
| 69 | 1 | Alphabetic | Auditing Agency Type |
| 70 - 75 | 6 | Numeric | Date Terminated (MMDDYY) |
| 76 - 77 | 2 | | Not Used |
| 78 - 79 | 2 | Numeric | Transaction Type (02) |
| 80 | 1 | Alphabetic | Action Code (A or C) |

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Figure AQT2-1 - continued. Site File Transaction Formats

Type 03 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 35 | 23 | Alphanumeric | City Name | |
| 36 - 38 | 3 | Numeric | Distance from Center City in Kilometers | |
| 39 - 43 | 5 | Numeric | City Population (Nearest Thousand) | |
| 44 - 48 | 5 | Numeric | AQCR Population (Nearest Thousand) | |
| 49 - 54 | 6 | Alphanumeric | Dominant Source of Influence | |
| 55 | 1 | Numeric | Measurement Scale | |
| 56 | 1 | Numeric | Land Use Code | |
| 57 | 1 | Numeric | Location Code | |
| 58 - 61 | 4 | Numeric | Distance from Nearest Road in Meters | |
| 62 - 64 | 3 | Numeric | Traffic Flow (Nearest Thousand) | |
| 65 | 1 | Numeric | Type of Roadway Code | |
| 66 - 77 | 12 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (03) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

Type 04 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 57 | 45 | Alphanumeric | Urbanized Area | |
| 58 - 72 | 15 | Alphanumeric | County Name | |
| 73 | 1 | Numeric | EPA Region | |
| 74 - 75 | 2 | Numeric | Time Zone | |
| 76 - 77 | 2 | Numeric | Station Type | |
| 78 - 79 | 2 | Numeric | Transaction Type (04) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

Type 05 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 | 1 | Alphabetic | Siting Criteria Met | |
| 14 - 19 | 6 | Numeric | When Siting Criteria Will Be Met (MMDDYY) | |
| 20 | 1 | Alphabetic | Not Meeting With Waiver | |
| 21 | 1 | Alphabetic | Ref/Equ Method Used | |
| 22 - 27 | 6 | Numeric | When Ref/Equ Method Will Be Used (MMDDYY) | |
| 28 | 1 | Alphabetic | Used for TSP PSI | |
| 29 | 1 | Alphabetic | Filters to EMSL | |
| 30 | 1 | Alphabetic | TSP NASN Station | |
| 31 | 1 | Alphabetic | Meteorological Data at Site | |
| 32 - 77 | 46 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (05) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

## Type 06 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 37 | 25 | Alphanumeric | Regional Office Contact Person | |
| 38 | 1 | Alphabetic | Regional Office Contact FTS | |
| 39 - 41 | 3 | Numeric | Regional Office Contact Area Code | |
| 42 - 48 | 7 | Numeric | Regional Office Contact Phone | |
| 49 - 77 | 29 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (06) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

Type 07 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 37 | 25 | Alphanumeric | State/Local Contact Person | |
| 38 | 1 | Alphabetic | State/Local Contact FTS | |
| 39 - 41 | 3 | Numeric | State/Local Contact Area Code | |
| 42 - 48 | 7 | Numeric | State/Local Contact Phone | |
| 49 - 77 | 29 | | Not Used | |
| 78 - 79 | 2 | Numeric | Card Type (07) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

Type 08 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 73 | 61 | Alphanumeric | Supporting Agency | |
| 74 - 77 | 4 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (08) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

Type 09 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 73 | 61 | Alphanumeric | Lab Collecting | |
| 74 - 77 | 4 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (09) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

### Type 10 Transaction

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 73 | 61 | Alphanumeric | Lab Analyzing | |
| 74 - 77 | 4 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (10) | |
| 80 | 1 | Alphabetic | Action Code (A or C) | |

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Figure AQT2-1 - continued. Site File Transaction Formats

### Type 11 Transaction*

| Column # | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 2 | 2 | Numeric | State Code | Key Fields |
| 3 - 6 | 4 | Numeric | Area Code | |
| 7 - 9 | 3 | Numeric | Site Code | |
| 10 | 1 | Alphabetic | Agency Code | |
| 11 - 12 | 2 | Numeric | Project Code | |
| 13 - 17 | 5 | Numeric | Parameter Code | |
| 18 - 19 | 2 | Numeric | Method Code | |
| 20 | 1 | Numeric | SLAMS/NAMS ID | |
| 21 - 23 | 3 | Numeric | Equipment Code | |
| 24 - 29 | 6 | Numeric | Date Calibrated (MMDDYY) | |
| 30 - 33 | 4** | Numeric | Height of Inlet Probe in Meters | |
| 34 - 54 | 21 | | Repeat Columns 13 - 33 | |
| 55 - 75 | 21 | | Repeat Columns 13 - 33 | |
| 76 - 77 | 2 | | Not Used | |
| 78 - 79 | 2 | Numeric | Transaction Type (11) | |
| 80 | 1 | Alphabetic | Action Code (A, C or D) | |

---

* No more than 20 parameter/method code combinations may exist in a given site file record.

** A one-position decimal code is assumed; e.g., 17.2 would be coded as '0172'. Leading zeroes are not required, but trailing zeroes must be coded.

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Figure AQT2-1 - continued. Site File Transaction Formats

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AGENCY ____________

**AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS – II)**
**COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)**
**SITE TRANSACTIONS**

BY ____________
DATE ____________
PAGE __ OF __

| | | | | |
|---|---|---|---|---|
| STATE | AREA | SITE | AGN | PROJ |
| 1 | 3 | 7 | 10 | 11 |

| |
|---|
| ACTION CODE |
| 80 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| AQCR | COUNTY | FIPS | NAQTS | AQMA | SMSA | SITE ADDRESS | CARD TYPE |
| 13 | 16 | 20 | 25 | 26 | 32 | 36 | 78 |
| | | | | | | | 0 1 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UTM ZONE | EASTING COORDINATE | | NORTHING COORDINATE | | SECTOR | HEM | LONGITUDE | | | HEM | LATITUDE | | | ELEVATION | COMMENCED | EVALUATION | AGN | AUDIT | AGN | TERMINATED | | CARD TYPE |
| | | | | | | | DEG | MIN | SEC | | DEG | MIN | SEC | | M M D D Y Y | M M D D Y Y | | M M D D Y Y | | M M D D Y Y | | |
| 13 | 15 | 19 | 23 | 26 | 30 | 32 | 33 | 36 | 38 | 40 | 41 | 43 | 45 | 47 | 50 | 56 | 62 | 63 | 69 | 70 | 76 | 78 |
| | | | | | | | | | | | | | | | | | | | | | | 0 2 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CITY NAME | DIST FROM CITY | CITY POP | AQCR POP. | SOURCE OF INFLUENCE | SCALE | LAND | LOCAT | DIST. FROM ROAD | TRAFF. FLOW | ROWAY | | CARD TYPE |
| 13 | 36 | 39 | 44 | 49 | 55 | 56 | 57 | 58 | 62 | 65 | | 78 |
| | | | | | | | | | | | | 0 3 |

| | | | | | |
|---|---|---|---|---|---|
| URBANIZED AREA | COUNTY NAME | REGN | TIME ZONE | STATION TYPE | CARD TYPE |
| 13 | 58 | 73 | 74 | 76 | 78 |
| | | | | | 0 4 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CRITERIA | | WAIVER | REF/EQU METH | | PSI | EMSL | NASN | METEOR | | CARD TYPE |
| MET | M M D D Y Y | | USED | M M D D Y Y | | | | | | |
| 13 | 14 | 20 | 21 | 22 | 28 | 29 | 30 | 31 | | 78 |
| | | | | | | | | | | 0 5 |

| | | | | | |
|---|---|---|---|---|---|
| R. O. CONTACT PERSON | FTS | PHONE | | | CARD TYPE |
| | | AREA CODE | NUMBER | | |
| 13 | 38 | 39 | 42 | | 78 |
| | | | | | 0 6 |

| | | | | | |
|---|---|---|---|---|---|
| STATE/LOCAL PERSON | FTS | PHONE | | | CARD TYPE |
| | | AREA CODE | NUMBER | | |
| 13 | 38 | 39 | 42 | | 78 |
| | | | | | 0 7 |

| | | |
|---|---|---|
| SUPPORTING AGENCY | | CARD TYPE |
| 13 | | 78 |
| | | 0 8 |

| | | |
|---|---|---|
| LAB COLLECTING | | CARD TYPE |
| 13 | | 78 |
| | | 0 9 |

| | | |
|---|---|---|
| LAB ANALYZING | | CARD TYPE |
| 13 | | 78 |
| | | 1 0 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PARM CODE | METH CODE | SLAMS | EQUIP CODE | CALIBRATED M M D D Y Y | HEIGHT OF INLET PROBE | PARM CODE | METH CODE | SLAMS | EQUIP CODE | CALIBRATED M M D D Y Y | HEIGHT OF INLET PROBE | PARM CODE | METH CODE | SLAMS | EQUIP CODE | CALIBRATED M M D D Y Y | HEIGHT OF INLET PROBE | | CARD TYPE |
| 13 | 18 | 20 | 21 | 24 | 30 | 34 | 39 | 41 | 42 | 45 | 51 | 55 | 60 | 62 | 63 | 66 | 72 | | 78 |
| | | | | | | | | | | | | | | | | | | | 1 1 |
| | | | | | | | | | | | | | | | | | | | 1 1 |
| | | | | | | | | | | | | | | | | | | | 1 1 |
| | | | | | | | | | | | | | | | | | | | 1 1 |
| | | | | | | | | | | | | | | | | | | | 1 1 |
| | | | | | | | | | | | | | | | | | | | 1 1 |
| | | | | | | | | | | | | | | | | | | | 1 1 |

Figure AQT2-2. Site File Transaction Load Sheet

```
//EPALMH02 JOB (A087,MLMH,,LMH,,1,35),TIME=3,PRTY=4,MSGLEVEL=(1,1)
//*
//* CREATE THE INITIAL SITE FILE
//*
//TEST2A  EXEC AQEMS10,
//             PRIMARY=1,
//             SECNDRY=1,
//             OUT=A,
//             NEWSITE=AQSITE01
//*
//* SORT AND EDIT THE SITE TRANSACTIONS;
//* USE THEM TO BUILD THE SITE FILE
//*
//SORT.INPUT DD *
100001001E0204910801111NAQMA00SMSANORTH 10TH AVENUE                         01A
100001001E02JACKSONVILLE                                                     03A
100001001E02                                            DUVAL                04A
100001001E0242401112                                                         11A
120001001C0106000801111NAQMA00SMSAMOUNTAIN ROAD, HILO, HAWAII CO.            01A
120001002C0106001401111NAQMA00SMSAPEARL HARBOR, HONOLULU, HONOLULU CO.       01A
120001003C0106001401111NAQMA00SMSAWAIKIKI, HONOLULU, HONOLULU CO.            01A
120001003C01WAIKIKI                                            0.            03A
120001003C0161102502                                                         11A
120001004C0106001401111NAQMA00SMSASCHOFIELD BARRACKS, HONOLULU CO.           01A
120001005C0106001401111NAQMA00SMSAPEARL CITY, HONOLULU CO.                   01A
120001006C0106001401111NAQMA00SMSAWAHIAWA, HONOLULU CO.                      01A
120001007C0106001401111NAQMA00SMSAKANEOHE, HONOLULU CO.                      01A
120001008C0106001401111NAQMA00SMSAKAILUA, HONOLULU CO.                       01A
200001004B0310800451111NAQMA00SMSAGLACIER DRIVE                              01A
200001004B03CARIBOU                                                          03A
200001004B03                                            AROOSTOOK            04A
200001004B0362101222                                                         11A
340001001A0616909601111NAQMA00SMSAYADKIN ROAD                                01A
340001003A06                                            CUMBERLAND           03A
340001003A06FAYETTEVILLE                                                     03A
340001001A0611201812            2110171              42101111                11A
340001001A0642102912            4240133              42602821                11A
340001002A0616621201111NAQMA00SMSAHIGHWAY 301 BUS., JOHNSTON CO.             01A
340001002A06SMITHFIELD                                                       03A
```

(Remainder of transactions omitted)

```
//UPDATE.AQSOLDST  DD DUMMY
//UPDATE.OPTIONS DD *
         FLAGW  80
//TEST2B EXEC AQRPS10,
//            SITEFIL=AQSITE01
//*
//* PRINT THE SITE FILE
//*
//PRINT.OPTIONS DD *
SHORT 80
/*
```

Figure AQT2-3. Run Stream

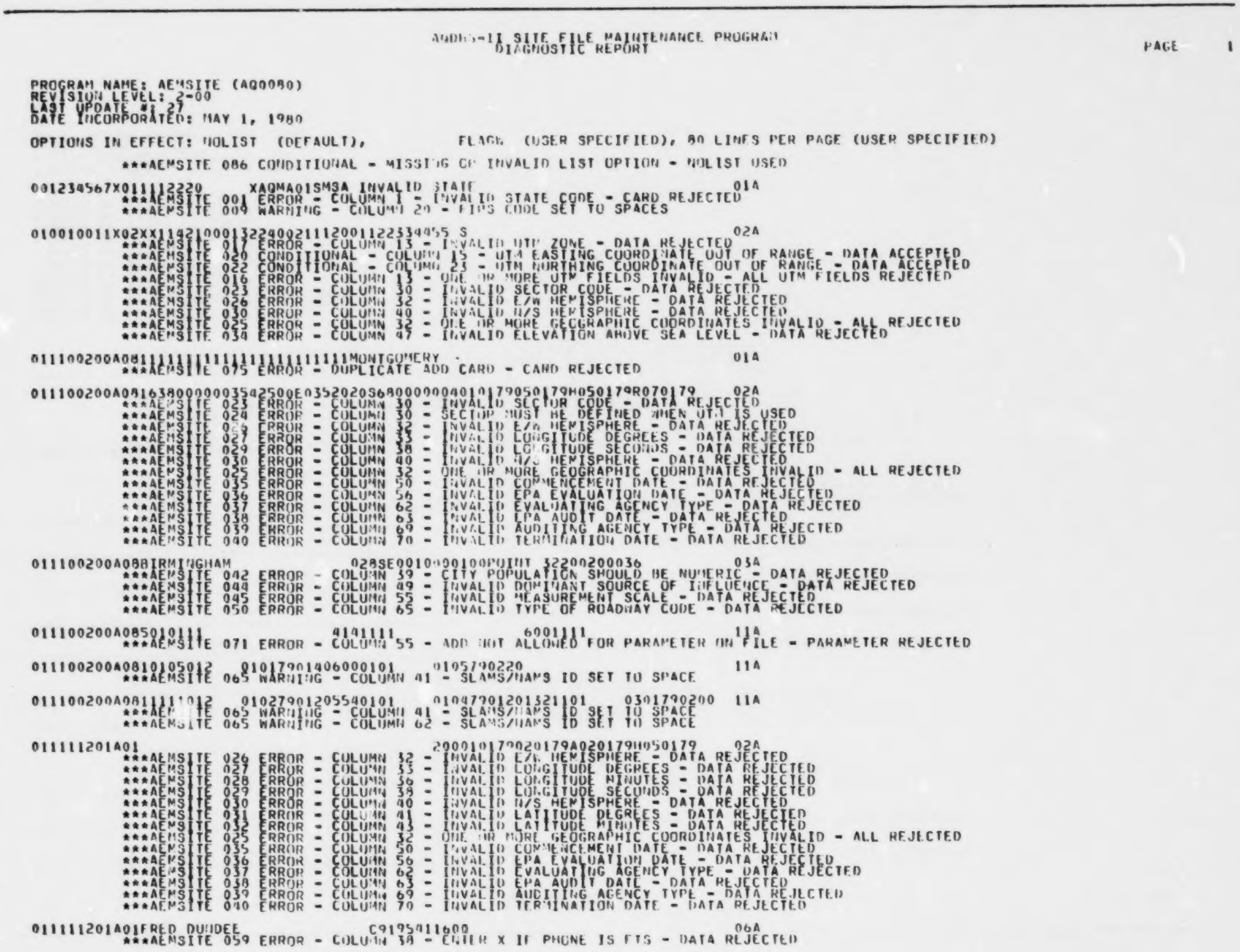
```
                         AQDHS-II SITE FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE  1

PROGRAM NAME: ASRSITE (AQ0160)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:          175
NUMBER OF OUTPUT TRANSACTIONS:         175
```

(Page 1 of 3)

Figure AQT2-4. Procedure AQEMS10 -- program ASRSITE



```
                         AQDHS-II SITE FILE MAINTENANCE PROGRAM                                     PAGE    1
                                  DIAGNOSTIC REPORT

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: NOLIST  (DEFAULT),          FLAGK  (USER SPECIFIED), 80 LINES PER PAGE (USER SPECIFIED)

         ***AEMSITE 086 CONDITIONAL - MISSING OR INVALID LIST OPTION - NOLIST USED

001234567X011112220      XAQMA01SMSA INVALID STATE                        01A
         ***AEMSITE 001 ERROR - COLUMN 1 - INVALID STATE CODE - CARD REJECTED
         ***AEMSITE 009 WARNING - COLUMN 20 - FIPS CODE SET TO SPACES

010010011X02XX1142100013224002111200112233 4455 S                          02A
         ***AEMSITE 017 ERROR - COLUMN 13 - INVALID UTM ZONE - DATA REJECTED
         ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED
         ***AEMSITE 022 CONDITIONAL - COLUMN 23 - UTM NORTHING COORDINATE OUT OF RANGE - DATA ACCEPTED
         ***AEMSITE 016 ERROR - COLUMN 13 - ONE OR MORE UTM FIELDS INVALID - ALL UTM FIELDS REJECTED
         ***AEMSITE 023 ERROR - COLUMN 30 - INVALID SECTOR CODE - DATA REJECTED
         ***AEMSITE 026 ERROR - COLUMN 32 - INVALID E/W HEMISPHERE - DATA REJECTED
         ***AEMSITE 030 ERROR - COLUMN 40 - INVALID N/S HEMISPHERE - DATA REJECTED
         ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED
         ***AEMSITE 034 ERROR - COLUMN 47 - INVALID ELEVATION ABOVE SEA LEVEL - DATA REJECTED

011100200A0811111111111111111111111MONTGOMERY  .                          01A
         ***AEMSITE 075 ERROR - DUPLICATE ADD CARD - CARD REJECTED

011100200A0816380000003542500E03520205680000004010179050179H050179R070179    02A
         ***AEMSITE 023 ERROR - COLUMN 30 - INVALID SECTOR CODE - DATA REJECTED
         ***AEMSITE 024 ERROR - COLUMN 30 - SECTOR MUST BE DEFINED WHEN UTM IS USED
         ***AEMSITE 026 ERROR - COLUMN 32 - INVALID E/W HEMISPHERE - DATA REJECTED
         ***AEMSITE 027 ERROR - COLUMN 33 - INVALID LONGITUDE DEGREES - DATA REJECTED
         ***AEMSITE 029 ERROR - COLUMN 38 - INVALID LONGITUDE SECONDS - DATA REJECTED
         ***AEMSITE 030 ERROR - COLUMN 40 - INVALID N/S HEMISPHERE - DATA REJECTED
         ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED
         ***AEMSITE 035 ERROR - COLUMN 50 - INVALID COMMENCEMENT DATE - DATA REJECTED
         ***AEMSITE 036 ERROR - COLUMN 56 - INVALID EPA EVALUATION DATE - DATA REJECTED
         ***AEMSITE 037 ERROR - COLUMN 62 - INVALID EVALUATING AGENCY TYPE - DATA REJECTED
         ***AEMSITE 038 ERROR - COLUMN 63 - INVALID EPA AUDIT DATE - DATA REJECTED
         ***AEMSITE 039 ERROR - COLUMN 69 - INVALID AUDITING AGENCY TYPE - DATA REJECTED
         ***AEMSITE 040 ERROR - COLUMN 70 - INVALID TERMINATION DATE - DATA REJECTED

011100200A08BIRMINGHAM              028SE00100000100POINT 32200200036        03A
         ***AEMSITE 042 ERROR - COLUMN 39 - CITY POPULATION SHOULD BE NUMERIC - DATA REJECTED
         ***AEMSITE 044 ERROR - COLUMN 49 - INVALID DOMINANT SOURCE OF INFLUENCE - DATA REJECTED
         ***AEMSITE 045 ERROR - COLUMN 55 - INVALID MEASUREMENT SCALE - DATA REJECTED
         ***AEMSITE 050 ERROR - COLUMN 65 - INVALID TYPE OF ROADWAY CODE - DATA REJECTED

011100200A085010111             4141111             6001111              11A
         ***AEMSITE 071 ERROR - COLUMN 55 - ADD NOT ALLOWED FOR PARAMETER ON FILE - PARAMETER REJECTED

011100200A0810105012   01017901406000101     0105790220                   11A
         ***AEMSITE 065 WARNING - COLUMN 41 - SLAMS/NAMS ID SET TO SPACE

011100200A0811111012   01027901205540101     01047901201321101    0301790200  11A
         ***AEMSITE 065 WARNING - COLUMN 41 - SLAMS/NAMS ID SET TO SPACE
         ***AEMSITE 065 WARNING - COLUMN 62 - SLAMS/NAMS ID SET TO SPACE

011111201A01                       20001017902017 9A020179H050179        02A
         ***AEMSITE 026 ERROR - COLUMN 32 - INVALID E/W HEMISPHERE - DATA REJECTED
         ***AEMSITE 027 ERROR - COLUMN 33 - INVALID LONGITUDE DEGREES - DATA REJECTED
         ***AEMSITE 028 ERROR - COLUMN 36 - INVALID LONGITUDE MINUTES - DATA REJECTED
         ***AEMSITE 029 ERROR - COLUMN 38 - INVALID LONGITUDE SECONDS - DATA REJECTED
         ***AEMSITE 030 ERROR - COLUMN 40 - INVALID N/S HEMISPHERE - DATA REJECTED
         ***AEMSITE 031 ERROR - COLUMN 41 - INVALID LATITUDE DEGREES - DATA REJECTED
         ***AEMSITE 032 ERROR - COLUMN 43 - INVALID LATITUDE MINUTES - DATA REJECTED
         ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED
         ***AEMSITE 035 ERROR - COLUMN 50 - INVALID COMMENCEMENT DATE - DATA REJECTED
         ***AEMSITE 036 ERROR - COLUMN 56 - INVALID EPA EVALUATION DATE - DATA REJECTED
         ***AEMSITE 037 ERROR - COLUMN 62 - INVALID EVALUATING AGENCY TYPE - DATA REJECTED
         ***AEMSITE 038 ERROR - COLUMN 63 - INVALID EPA AUDIT DATE - DATA REJECTED
         ***AEMSITE 039 ERROR - COLUMN 69 - INVALID AUDITING AGENCY TYPE - DATA REJECTED
         ***AEMSITE 040 ERROR - COLUMN 70 - INVALID TERMINATION DATE - DATA REJECTED

011111201A01FRED DUNDEE            C9195411600                            06A
         ***AEMSITE 059 ERROR - COLUMN 38 - ENTER X IF PHONE IS FTS - DATA REJECTED
```

(page 2 of 3)

Figure AQT2-4 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                     AQDHS-II SITE FILE MAINTENANCE PROGRAM                                        PAGE      3
                                              DIAGNOSTIC REPORT

232640075A021600275000477100OHWW0834400N430700008                                02A
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED

284360008B051400690000452600OHWW0965000N405200                                   02A
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED

340001003A06                                          CUMBERLAND                 03A
          ***AEMSITE 048 ERROR - COLUMN 58 - INVALID DISTANCE FROM NEAREST ROAD - DATA REJECTED
          ***AEMSITE 049 ERROR - COLUMN 62 - INVALID TRAFFIC FLOW ESTIMATE - DATA REJECTED
          ***AEMSITE 050 ERROR - COLUMN 65 - INVALID TYPE OF ROADWAY CODE - DATA REJECTED
          ***AEMSITE 075 ERROR - DUPLICATE ADD CARD - CARD REJECTED

340003002G04                                          GUILFORD                   03A
          ***AEMSITE 048 ERROR - COLUMN 58 - INVALID DISTANCE FROM NEAREST ROAD - DATA REJECTED
          ***AEMSITE 049 ERROR - COLUMN 62 - INVALID TRAFFIC FLOW ESTIMATE - DATA REJECTED
          ***AEMSITE 050 ERROR - COLUMN 65 - INVALID TYPE OF ROADWAY CODE - DATA REJECTED
          ***AEMSITE 075 ERROR - DUPLICATE ADD CARD - CARD REJECTED

352520001A071400668000519000OSWW0964700N465000                                   02A
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED

369320011D011700520000456500OHWW0804500N411500                                   02A
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED

443840014D011700250000398700OHEW0835000N360200                                   02A
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED

501480019A011700445000424500OHWW0814300N382200                                   02A
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED

520043330Z11X0800000007777000S3                                                  02A
          ***AEMSITE 017 ERROR - COLUMN 13 - INVALID UTM ZONE - DATA REJECTED
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED
          ***AEMSITE 016 ERROR - COLUMN 13 - ONE OR MORE UTM FIELDS INVALID - ALL UTM FIELDS REJECTED
          ***AEMSITE 023 ERROR - COLUMN 30 - INVALID SECTOR CODE - DATA REJECTED

520043330Z11AXXXXXXXXXXXXXXXX                                                    11A
          ***AEMSITE 063 ERROR - COLUMN 13 - INVALID PARAMETER CODE - GROUP 1 DATA REJECTED
          ***AEMSITE 064 ERROR - COLUMN 18 - INVALID METHOD CODE - GROUP 1 DATA REJECTED
          ***AEMSITE 066 ERROR - COLUMN 20 - INVALID SLAMS/NAMS ID - DATA REJECTED
          ***AEMSITE 067 ERROR - COLUMN 21 - INVALID EQUIPMENT CODE - DATA REJECTED
          ***AEMSITE 068 ERROR - COLUMN 24 - INVALID CALIBRATION DATE - DATA REJECTED

5601221371201130214212I0NAQMASSSMSA NOWHERE LAND                                 01A
          ***AEMSITE 001 ERROR - COLUMN 1 - INVALID STATE CCDE - CARD REJECTED
          ***AEMSITE 004 ERROR - COLUMN 10 - INVALID AGENCY CODE - CARD REJECTED

NUMBER OF INPUT TRANSACTIONS:              175
NUMBER OF INPUT SITE FILE RECORDS:           0
NUMBER OF OUTPUT SITE FILE RECORDS:         53
NUMBER OF SITES CHANGED:                     0
NUMBER OF SITES ADDED:                      53
NUMBER OF SITES DELETED:                     0
NUMBER OF WARNING MESSAGES:                 12
NUMBER OF CONDITIONAL MESSAGES:             13
NUMBER OF ERROR MESSAGES:                   99
NUMBER OF ABORT MESSAGES:                    0
NUMBER OF DISASTER MESSAGES:                 0

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 3 of 3)

Figure AQT2-4 - continued. Procedure AQEMS10 -- program AEMSITE

```
                         AQDHS-II SITE FILE DETAILED REPORT PROGRAM - DIAGNOSTIC REPORT                          PAGE    1

PROGRAM NAME: ARPSITE (AQ0260)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTION CARD IMAGE:  SHORT 80                                                     214.
*** ARPSITE 003 CONDITIONAL - OPTION CARD COLUMN 10:  FIRST RECORD VALUE MISSING OR INVALID: RECORD 1 IS DEFAULT
*** ARPSITE 004 CONDITIONAL - OPTION CARD COLUMN 15:  # RECORDS VALUE MISSING OR INVALID: PRINT TO END OF SITE FILE

  ALL RECORDS ARE TO BE PRINTED WITH  SHORT FIELD FORMAT BEGINNING WITH RECORD #     1.  A MAXIMUM OF 80 LINES PER PAGE ARE ALLOWED.


NUMBER OF INPUT SITE FILE RECORDS:        59
NUMBER OF RECORDS PRINTED:                59
NUMBER OF REPORT PAGES:                   10
NUMBER OF DIAGNOSTIC MESSAGES:             2
```

(Page 1 of 2)

Figure AQT2-5.  Procedure AQRPS10 -- program ARPSITE

```
                                                 AQDHS-II SITE FILE DETAILED REPORT                                PAGE     1

  STATE                          AREA  SITE  AGENCY  PROJECT  AQCR  COUNTY  FIPS CODE  NAQTS   AQMA   SMSA         STATION TYPE
01 (ALABAMA)                     0010   011    X        02     111   2220     11234      X    AQAQAQ  SMSA
             SITE ADDRESS                          CITY NAME                      URBANIZED AREA                           COUNTY NAME
ENGINERING SCIENCES

*** NO PARAMETERS FOR THIS SITE RECORD
*==================================================================================================================================
  STATE                          AREA  SITE  AGENCY  PROJECT  AQCR  COUNTY  FIPS CODE  NAQTS   AQMA   SMSA         STATION TYPE
01 (ALABAMA)                     0010   011    X        08     111   2220     11234      X    AQAQAQ  SMSA
             SITE ADDRESS                          CITY NAME                      URBANIZED AREA                           COUNTY NAME
ENGINERING SCIENCES

*** NO PARAMETERS FOR THIS SITE RECORD
*==================================================================================================================================
  STATE                          AREA  SITE  AGENCY  PROJECT  AQCR  COUNTY  FIPS CODE  NAQTS   AQMA   SMSA         STATION TYPE
01 (ALABAMA)                     0010   021    A        10     121   2000     23221      X    AQMA01  SMSA
             SITE ADDRESS                          CITY NAME                      URBANIZED AREA                           COUNTY NAME
 TENNESSEE VALLEY AUTHORITY, HUNTSVILLE

*** NO PARAMETERS FOR THIS SITE RECORD
*==================================================================================================================================
  STATE                          AREA  SITE  AGENCY  PROJECT  AQCR  COUNTY  FIPS CODE  NAQTS   AQMA   SMSA         STATION TYPE
01 (ALABAMA)                     0010   021    Z        10     121   2000     23221      X    AQMA01  SMSA
             SITE ADDRESS                          CITY NAME                      URBANIZED AREA                           COUNTY NAME
HONEYWELL

*** NO PARAMETERS FOR THIS SITE RECORD
*==================================================================================================================================
  STATE                          AREA  SITE  AGENCY  PROJECT  AQCR  COUNTY  FIPS CODE  NAQTS   AQMA   SMSA         STATION TYPE
01 (ALABAMA)                     0020   011    X        08     111   2220     11234      X    AQAQAQ  SMSA
             SITE ADDRESS                          CITY NAME                      URBANIZED AREA                           COUNTY NAME
ENGINERING SCIENCES

*** NO PARAMETERS FOR THIS SITE RECORD
*==================================================================================================================================
  STATE                          AREA  SITE  AGENCY  PROJECT  AQCR  COUNTY  FIPS CODE  NAQTS   AQMA   SMSA         STATION TYPE
01 (ALABAMA)                     0600   300    A        08     111   1111     22222      N    AQMA01  SMSA
             SITE ADDRESS                          CITY NAME                      URBANIZED AREA                           COUNTY NAME
UNION SCIENCES

*** NO PARAMETERS FOR THIS SITE RECORD
*==================================================================================================================================
  STATE                          AREA  SITE  AGENCY  PROJECT  AQCR  COUNTY  FIPS CODE  NAQTS   AQMA   SMSA         STATION TYPE
01 (ALABAMA)                     0700   300    A        08     111   1111     22222      N    AQMA01  SMSA
             SITE ADDRESS                          CITY NAME                      URBANIZED AREA                           COUNTY NAME
ATOMIC FUELS INC.

*** NO PARAMETERS FOR THIS SITE RECORD
```

(Page 2 of 2)

Figure AQT2-5 - continued. Procedure AQRPS10 -- program ARPSITE

## AQDHS-II TEST 3

## Create and Print the Parameter Standards File

In this test run, an initial AQDHS-II parameter standards file is created using the cataloged procedure AQEMD10 which executes ASRSTND (AQ0170), the parameter standards file transaction sort program, and AEMSTND (AQ0090), the parameter standards file maintenance program. The cataloged procedure AQRPD10 is then used to produce a formatted listing of the parameter standards file by executing ARPSTND (AQ0250), the parameter standards file detailed report program.

ASRSTND (AQ0170) sorts the parameter standards file transactions (see Figure AQT3-1 for the transaction format) into the sequence required by AEMSTND (AQ0090). The fields of each transaction are sorted in the following order:

| Columns | Description | Sort Order |
|---|---|---|
| 1 - 5 | Parameter Code | Ascending |
| 6 | Standard Type | Ascending |
| 7 - 8 | Standard Number | Ascending |

All parameter standards file transactions must be sorted by ASRSTND (AQ0170) before they can be used to create the parameter standards file.

When a record is added to the parameter standards file, the primary standard must be specified by entering an add card with 1 in the card number field. The secondary standard is optional. However, the secondary standard can be added to an existing record by an add transaction or a change transaction with 2 in the card number field. It is impossible to have a record with only the secondary standard defined.

Any non-key field in an existing record can be changed. Changes are made by a transaction containing: the key of the record to be changed (parameter code, standard type, and standard number), new valid data in the fields to be changed, a valid card number (1 for a primary standard, 2 for a secondary standard), and an action code of C. Non-key fields that are left blank on a change transaction are not changed in the corresponding parameter standards file record (except for the standard description field as noted below).

A delete transaction with a 1 in the card number field will delete the entire record from the file. A delete transaction with a 2 in the card number field will delete the secondary standard. It is impossible to delete the primary standard only. In either case, all non-key fields (columns 9 through 78) should be left blank for a successful deletion.

ARPSTND (AQ0250) prints the parameter standards file in a columnized format which includes headings and a footnote feature. The content of each parameter standards file record is listed on two print lines: the first line lists the primary standard, and the second line lists the secondary standard.

The run stream for this test run contains the JCL necessary for creating an AQDHS-II parameter standards file and producing a formatted listing of this file. This run stream is shown in Figure AQT3-3. It does not show all the input parameter standards transactions in the run stream, but does show the necessary JCL.

First, the run stream executes the cataloged procedure AQEMD10. Since this test run creates the initial AQDHS-II parameter standards file, there is obviously not an input parameter standards file to be accessed. This is why the old parameter standards file AQSOLDFL must be a dummy file in the UPDATE step. Through the use of a substitutable parameter, the new parameter standards file is named AQSTND01. The user must supply the DD (data definition) information for the input parameter standards transaction file in the SORT step. Refer to Figure AQT3-4 for the sample output produced by this procedure.

Next, the cataloged procedure AQRPD10 is executed. A substitutable parameter is used to specify AQSTND01 as the input parameter standards file. Figure AQT3-5 shows the sample output produced by this procedure.

| Card Column | Field Length | Data Type | Description | |
|---|---|---|---|---|
| 1 - 5 | 5 | Numeric | Parameter code | Transaction Key |
| 6 | 1 | Alphabetic | Standard type | |
| 7 - 8 | 2 | Numeric | Standard number | |
| 9 - 10 | 2 | Numeric | Standard units code | |
| 11 - 12 | 2 | Numeric | Standard code | |
| 13 - 19 | 7* | Numeric | Standard level | |
| 20 - 74 | 55 | Alphanumeric | Standard description | |
| 75 - 78 | - | - | Not used | |
| 79 | 1 | Numeric | Card Number | |
| 80 | 1 | Alphabetic | Action code | |

---

*A four-digit decimal position is assumed; e.g., 0.12 would be coded as '0001200'. Leading zeroes are not required, but trailing zeroes must be coded.

Figure AQT3-1. Parameter Standards File Transaction Format

AGENCY________

**AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS–II)**
**COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)**
**PARAMETER STANDARDS TRANSACTIONS**

BY________
DATE______
PAGE___OF__

| PARAMETER CODE | TYPE | STD NO. | UNITS CODE | STD CODE | STD LEVEL | STANDARD DESCRIPTION | | CARD | ACTION |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 6 | 7 | 9 | 11 | 13 | 20 74 | | 79 | 80 |
| | | | | | | | | | |
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Figure AQT3-2. Parameter Standards File Transaction Load Sheet

```
//EPALMH03 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=1,MSGLEVEL=(1,1)
//*
//* CREATE THE INITIAL PARAMETER STANDARDS FILE
//*
//TEST3A  EXEC AQEMD10,
//             PRIMARY=1,
//             SECNDRY=1,
//             OUT=A,
//             NEWSTAN=AQSTND01
//*
//* SORT AND EDIT THE PARAMETER STANDARDS TRANSACTIONS;
//* THEN USE THEM TO BUILD THE PARAMETER STANDARDS FILE
//*
//SORT.INPUT DD *
11101F0101              75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                  1A
11101F0101              60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                  2A
11101F0202              75 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN                   1A
11101F0202              60 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN                   2A
11101S0102              60 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN                   1A
11101S0102              60 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN                   2A
11101F0301             260 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR.           1A
11101F0301             150 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR.           2A
11101S0201             250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR            1A
11101S0201             120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR             2A
42401F0101             365 UG/M3 (25 C)  24 HOUR MAXIMUM, 1 PER YEAR           1A
42401F0207             0.14 PARTS PER MILLION  24 HOUR MAX, 1 PER YEAR         1A
42401F0301              80 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN                1A
42401F0407             0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              1A
42401F0102             1300 UG/M3 (0 C), 3 HR. MAX.,1 PER YR                   2A
42401F0207             0.5 PARTS/MILLION, 3 HR MAX, 1 PER YEAR                 2A
42401S0101              60 UG/M3 (25 C)  ANNUAL ARITHMETIC MEAN                1A
42401S0201             360 UG/M3 (25 C) , 24 HR. MAX., 1 PER YEAR              1A
42401S0307             0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              1A
42401S0407             0.09 PARTS/MILLION, 24 HR. MAX., 1 PER YEAR             1A
42401S0107             0.4 PARTS/MILLION,  3 HR.MAX, 1 PER YEAR                2A
42602F0101             100 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN                1A
42602F0101             100 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN                2A
42602F0207             0.05 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              1A
42602F0207             0.05 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              2A
42602S0102              90 UG/M3 (0 C) ANNUAL ARITHMETIC MEAN                  1A
42602S0102              90 UG/M3 (0 C) ANNUAL ARITHMETIC MEAN                  2A
42602S0207             0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              1A
42602S0207             0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              2A
```

(Remainder of transactions omitted)

```
//UPDATE.AQSOLDSD  DD DUMMY
//TEST3B EXEC AQRPD10,
//             STANFIL=AQSTND01
//*
//* PRINT THE PARAMETER STANDARDS FILE
//*
```

Figure AQT3-3. Run Stream

```
                    AQDHS-II PARAMETER STANDARDS FILE TRANSACTION SORT PROGRAM - DIAGNOSTIC REPORT          PAGE    1

PROGRAM NAME: ASRSTND (AQ0170)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF TRANSACTIONS READ:          81
NUMBER OF TRANSACTIONS WRITTEN:       81
```

(Page 1 of 2)

Figure AQT3-4. Procedure AQEMD10 -- program ASRSTND

```
                                   AQDHS-II PARAMETER STANDARDS FILE MAINTENANCE PROGRAM                    PAGE    1
                                                    DIAGNOSTIC REPORT

PROGRAM NAME: AEMSTND (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: NOLIST (DEFAULT),        55 LINES PER PAGE  (DEFAULT)

         *** AEMSTND 001 CONDITIONAL - NO OPTION CARD - DEFAULT OF NOLIST, 55-LINES USED


NUMBER OF INPUT TRANSACTIONS                                   81
NUMBER OF INPUT PARAMETER STANDARDS FILE RECORDS:               0
NUMBER OF OUTPUT PARAMETER STANDARDS FILE RECORDS:             43
NUMBER OF RECORDS CHANGED:                                      0
NUMBER OF RECORDS ADDED:                                       43
NUMBER OF RECORDS DELETED:                                      0
NUMBER OF CONDITIONAL MESSAGES:                                 1
NUMBER OF ERROR MESSAGES:                                       0
NUMBER OF ABORT MESSAGES:                                       0
NUMBER OF DISASTER MESSAGES:                                    0
```

(Page 2 of 2)

Figure AQT3-4 - continued.  Procedure AQEMD10 -- program AEMSTND

```
                                        AQDHS-II PARAMETER STANDARDS FILE LISTING                                   PAGE    1

PROGRAM-NAME: ARPSTND (AQ0250)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

**          K E Y         **        UNIT     CODE       LEVEL                          DESCRIPTION
PARM-CODE   F/S    STD-NBR
-------------------------------------------------------------------------------------------------------------------------------

  11101      F       01              01                                  75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
                                     01                                  60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
  11101      F       02              02                                  75 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN
                                     02                                  60 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN
  11101      F       03              01                                 260 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR.
                                     01                                 150 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR.
  11101      S       01              02                                  60 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN
                                     02                                  60 UG/M3 (0 C) ANNUAL GEOMETRIC MEAN
  11101      S       02              01                                 250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR
                                     01                                 120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR
  42101      F       01              02                              10,000 UG/M3 (0 C)   8 HR. MAX, 1 PER YR.
                                     02                              10,000 UG/M3 (0 C)  8 HR. MAX, 1 PER YR.
  42101      F       02              01                              40,000 UG/M3 (25 C)  1 HR. MAX, 1 PER YR.
                                     01                              40,000 UG/M3 (25 C) 1 HR. MAX, 1 PER YR.
  42101      F       03              07                                   9 PARTS/MILLION , 8 HR MAX, 1 PER YEAR
                                     07                                   9 PARTS/MILLION , 8 HR MAX, 1 PER YEAR
  42101      F       04              07                                  35 PARTS/MILLION, 1 HR. MAX, 1 PER YR
                                     07                                  35 PARTS/MILLION, 1 HR. MAX, 1 PER YR
  42101      S       01              01                              10,000 UG/M3 (25 C), 8 HR. MAX, 1 PER YR.
                                     01                              10,000 UG/M3 (25 C) 8 HR. MAX, 1 PER YR.
  42101      S       02              01                              35,000 UG/M3 (25 C)  1 HR. MAX, 1 PER YR.
                                     01                              35,000 UG/M3 (25 C) 1 HR. MAX, 1 PER YR.
  42101      S       03              07                                   9 PARTS/MILLION , 8 HR MAX, 1 PER YEAR
                                     07                                   9 PARTS/MILLION , 8 HR MAX, 1 PER YEAR
  42101      S       04              07                                  30 PARTS/MILLION, 1 HR. MAX, 1 PER YR
                                     07                                  30 PARTS/MILLION, 1 HR. MAX, 1 PER YR
  42401      F       01              01                                 365 UG/M3 (25 C)  24 HOUR MAXIMUM, 1 PER YEAR
                                     02                                 1300 UG/M3 (0 C), 3 HR. MAX.,1 PER YR
  42401      F       02              07                                 0.14 PARTS PER MILLION  24 HOUR MAX, 1 PER YEAR
                                     07                                 0.5 PARTS/MILLION, 3 HR MAX, 1 PER YEAR
  42401      F       03              01                                  80 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN

  42401      F       04              07                                 0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN

  42401      S       01              01                                  60 UG/M3 (25 C)  ANNUAL ARITHMETIC MEAN
                                     07                                 0.4 PARTS/MILLION,  3 HR.MAX, 1 PER YEAR
  42401      S       02              01                                 360 UG/M3 (25 C) , 24 HR. MAX., 1 PER YEAR

  42401      S       03              07                                 0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN

  42401      S       04              07                                 0.09 PARTS/MILLION, 24 HR. MAX., 1 PER YEAR

  42602      F       01              01                                 100 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN
                                     01                                 100 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN
  42602      F       02              07                                 0.05 PARTS/MILLION, ANNUAL ARITHMETIC MEAN
                                     07                                 0.05 PARTS/MILLION, ANNUAL ARITHMETIC MEAN

                                                                     PARM-CODE: 11101* F/S: F* STD-NBR: 01**    PAGE    1
```

(Page 1 of 2)

Figure AQT3-5. Procedure AQRPD10 -- program ARPSTND

```
                                                 ARPSTND (AQ0250) SUMMARY MESSAGES

PARAMETER STANDARDS RECORDS READ:       43
PARAMETER STANDARDS RECORDS LISTED:     43

PROGRAM-NAME: ARPSTND (AQ0250)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 2 of 2)

Figure AQT3-5 - continued. Procedure AQRPD10 -- program ARPSTND

## AQDHS-II TEST 4

### Convert SAROAD Transactions to AQDHS-II Transactions

In this test run, SAROAD transactions are converted to AQDHS-II master file transactions using the cataloged procedure AQCVT10 which executes ACVSARD (AQ0010), the SAROAD to AQDHS-II conversion program.

ACVSARD (AQ0010) accepts SAROAD transactions and action cards and outputs AQDHS-II master file transactions. These transactions may then be used to create or update the AQDHS-II master file.

There are three formats for the SAROAD transactions: Form 1, Form 2, and Form 3. These forms are designed to accomodate different types of data. Form 1 transactions are used to enter readings taken at less than daily intervals. Form 2 and Form 3 transactions are used for readings taken at daily or greater than daily intervals. Form 2 transactions allow readings for multiple parameters at a given site. Whereas, Form 3 transactions allow readings at multiple sites for a given parameter. Also, Form 2 transactions are used to enter composite data. Refer to Figure AQT4-1 for samples of the SAROAD load sheets and to Figure AQT4-2 for the SAROAD transaction formats. The SAROAD Form 1, Form 2, and Form 3 transactions correspond to the AQDHS-II Form 1, Form 2, and Form 3 transactions, respectively. No SAROAD transaction corresponds to the AQDHS-II Form 4, so no Form 4 transactions are created.

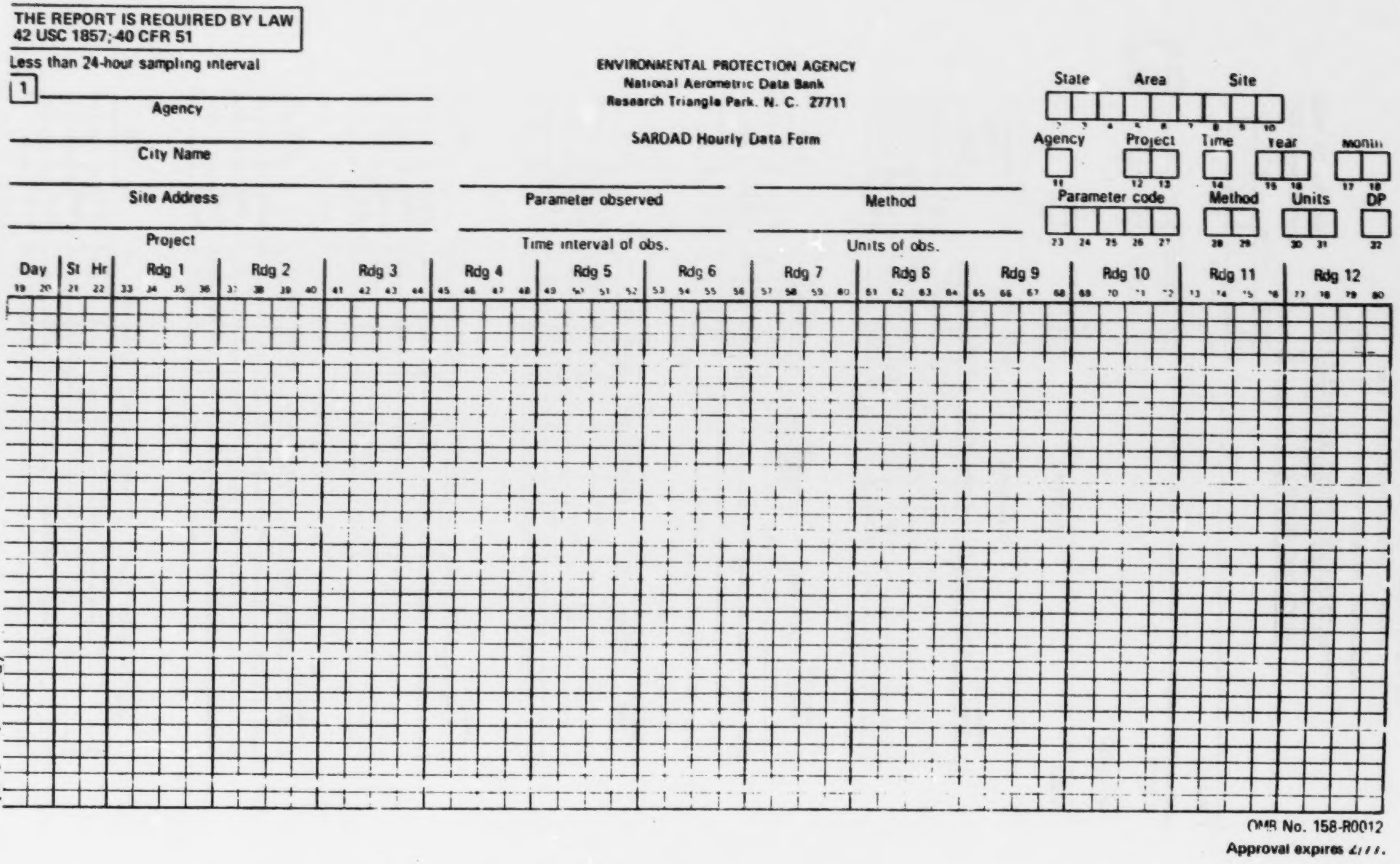
The SAROAD transactions, unlike the AQDHS-II transactions, do not have individual action codes. An action card indicates the action to be performed by all SAROAD transactions following it until the next action card is encountered. Action cards are identified by a '$' in column 1 and an action code in column 2. There are three valid action codes: '1', '2', and '3'. A '1' means delete, a '2' means add, and a '3' means change. A '$4' card is a status flag card and indicates that all SAROAD transactions following it have been sent to SAROAD. ACVSARD (AQ0010) generates AQDHS-II transactions with a transaction status flag of 'S' for all the input SAROAD Transactions which follow a '$4' card. The '$4' card does not override the action code currently in effect (1, 2, or 3). The '$4' status flag card can not be used alone; it must follow a '$2' card.

The options in this program are used to specify whether the input SAROAD transaction file and the output AQDHS-II transaction file are to be printed. In order to have the input and output files printed, the word LIST must begin in column 1 of the option card. However, if these files are not to be printed, the word NOLIST should begin in card column 1. The default value of NOLIST will be used to control printing when the option specified is invalid or an option card is not present in the run stream.

It is very likely that the number of output AQDHS-II master file transactions will be greater than the number of input SAROAD transactions. This is a result of the SAROAD transaction's capability to hold more data than the AQDHS-II transaction. For example, a SAROAD transaction can contain up to 12 hours of hourly data, whereas, an AQDHS-II transaction can contain only 8. So in this case, it takes two AQDHS-II transactions to hold the data contained in one SAROAD transaction.

The run stream for this test run contains the JCL necessary for converting SAROAD transactions into AQDHS-II master file transactions. This run stream is shown in Figure AQT4-3. It does not show all the input SAROAD transactions in the run stream, but does show the necessary JCL.

The cataloged procedure executed by this run stream is AQCVT10. The user must supply the DD (data definition) information for the option card file, the input SAROAD transaction file, and the output AQDHS-II transaction file in the CONVERT step. In this run stream, the output AQDHS-II transaction file will be named AQTRANS and stored on disk. The option specified in this test run is NOLIST. Refer to Figure AQT4-4 for the sample output produced by this procedure.



**THE REPORT IS REQUIRED BY LAW**
**42 USC 1857; 40 CFR 51**

Less than 24-hour sampling interval

1

ENVIRONMENTAL PROTECTION AGENCY
National Aerometric Data Bank
Research Triangle Park. N. C. 27711

SAROAD Hourly Data Form

Agency

City Name

Site Address

Project

Parameter observed

Time interval of obs.

Method

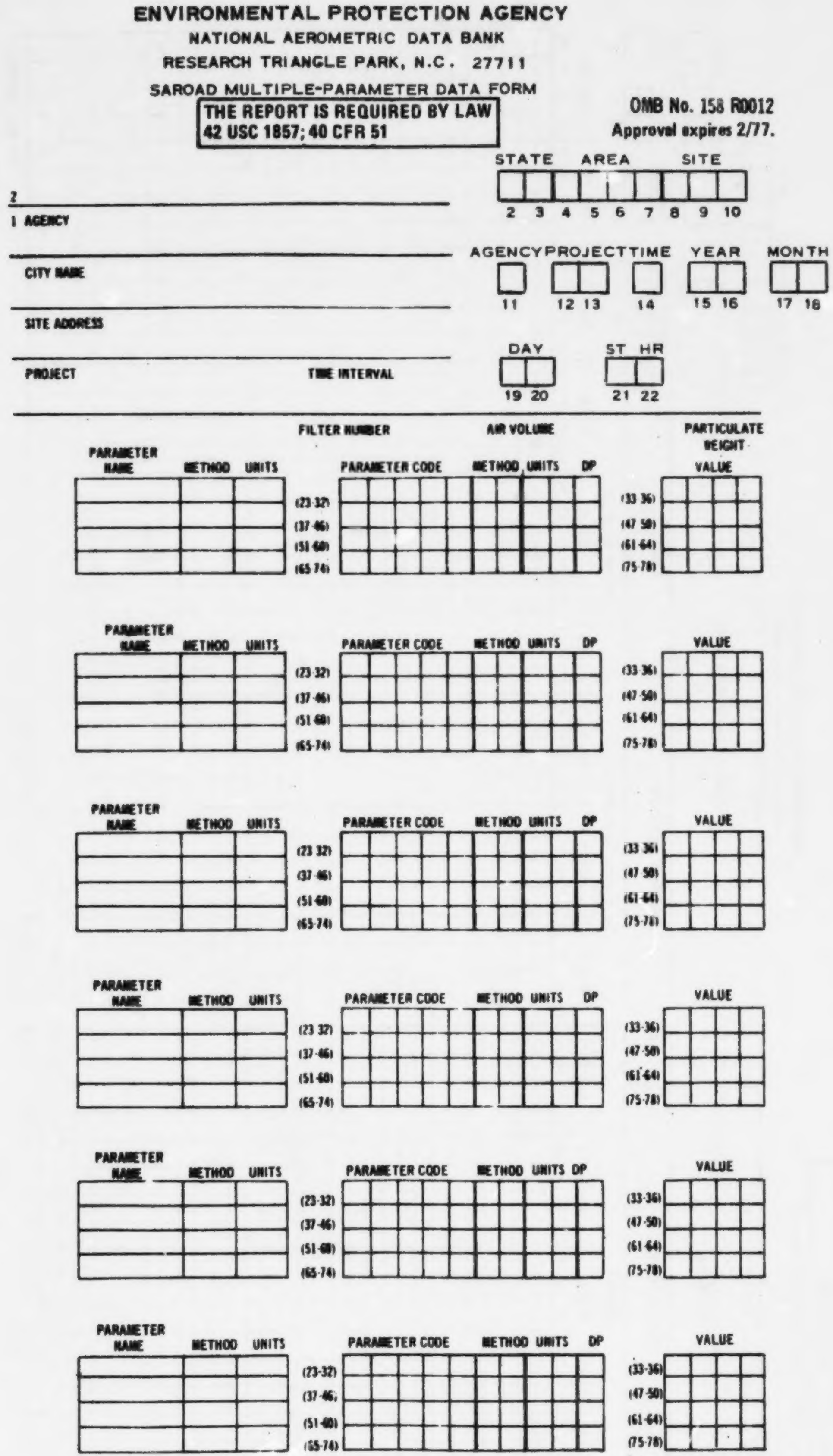
Units of obs.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| State | Area | Site | Agency | Project | Time | Year | Month | Parameter code | Method | Units | DP |
| 2 3 | 4 5 6 | 7 8 9 10 | 11 | 12 13 | 14 | 15 16 | 17 18 | 23 24 25 26 27 | 28 29 | 30 31 | 32 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | St | Hr | Rdg 1 | Rdg 2 | Rdg 3 | Rdg 4 | Rdg 5 | Rdg 6 | Rdg 7 | Rdg 8 | Rdg 9 | Rdg 10 | Rdg 11 | Rdg 12 |
| 19 20 | 21 | 22 | 33 34 35 36 | 37 38 39 40 | 41 42 43 44 | 45 46 47 48 | 49 50 51 52 | 53 54 55 56 | 57 58 59 60 | 61 62 63 64 | 65 66 67 68 | 69 70 71 72 | 73 74 75 76 | 77 78 79 80 |

OMB No. 158-R0012
Approval expires 2/77.

Figure AQT4-1. SAROAD Load Sheets (Page 1 of 5)



ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AEROMETRIC DATA BANK
RESEARCH TRIANGLE PARK, N.C. 27711
SAROAD MULTIPLE-PARAMETER DATA FORM

THE REPORT IS REQUIRED BY LAW
42 USC 1857; 40 CFR 51

OMB No. 158 R0012
Approval expires 2/77.

STATE AREA SITE
2 3 4 5 6 7 8 9 10

2
1 AGENCY

CITY NAME

SITE ADDRESS

PROJECT TIME INTERVAL

AGENCY PROJECT TIME YEAR MONTH
11 12 13 14 15 16 17 18

DAY ST HR
19 20 21 22

FILTER NUMBER AIR VOLUME PARTICULATE WEIGHT

PARAMETER NAME METHOD UNITS
PARAMETER CODE METHOD UNITS DP
VALUE
(23-32) (33-36)
(37-46) (47-50)
(51-60) (61-64)
(65-74) (75-78)

PARAMETER NAME METHOD UNITS
PARAMETER CODE METHOD UNITS DP
VALUE
(23-32) (33-36)
(37-46) (47-50)
(51-60) (61-64)
(65-74) (75-78)

PARAMETER NAME METHOD UNITS
PARAMETER CODE METHOD UNITS DP
VALUE
(23-32) (33-36)
(37-46) (47-50)
(51-60) (61-64)
(65-74) (75-78)

PARAMETER NAME METHOD UNITS
PARAMETER CODE METHOD UNITS DP
VALUE
(23-32) (33-36)
(37-46) (47-50)
(51-60) (61-64)
(65-74) (75-78)

PARAMETER NAME METHOD UNITS
PARAMETER CODE METHOD UNITS DP
VALUE
(23-32) (33-36)
(37-46) (47-50)
(51-60) (61-64)
(65-74) (75-78)

PARAMETER NAME METHOD UNITS
PARAMETER CODE METHOD UNITS DP
VALUE
(23-32) (33-36)
(37-46) (47-50)
(51-60) (61-64)
(65-74) (75-78)

(Page 2 of 5)

Figure AQT4-1 - continued. SAROAD Load Sheets

**ENVIRONMENTAL PROTECTION AGENCY**
**National Aerometric Data Bank**
**Research Triangle Park, N. C. 27711**

**SAROAD Daily Data Form**

**THE REPORT IS REQUIRED BY LAW**
**42 USC 1857; 40 CFR 51**

OMB No. 158-R0012
**Approval expires 2/77.**

24-hour or greater sampling interval

2
1

Agency

City Name

Site Address

Project

Time Interval

State Area Site
2 3 4 5 6 7 8 9 10

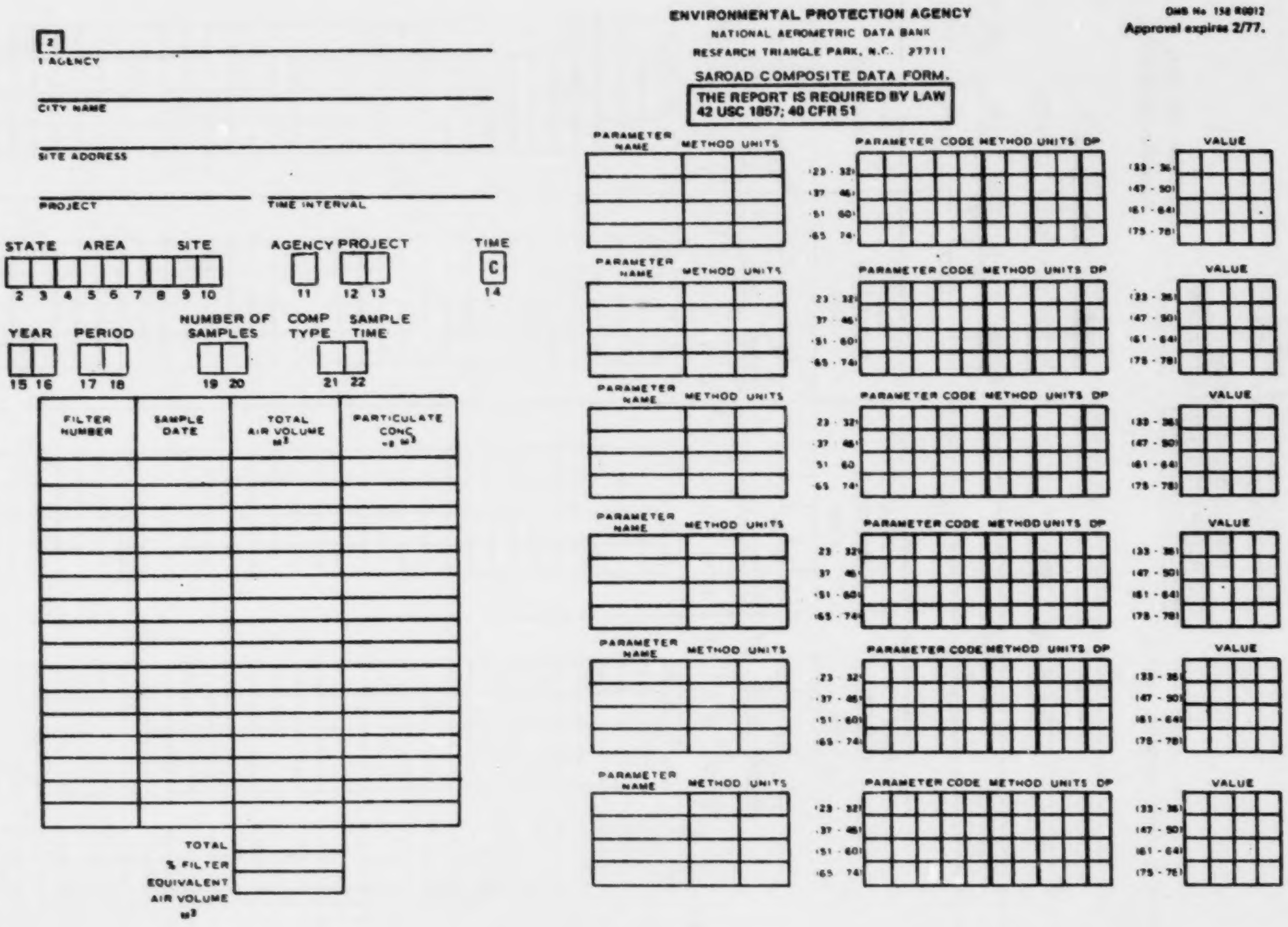
Agency 11
Project 12 13
Time 14
Year 15 16
Month 17 18

| | | | |
|---|---|---|---|
| Name<br>PARAMETER<br>Code | Name<br>PARAMETER<br>Code | Name<br>PARAMETER<br>Code | Name<br>PARAMETER<br>Code |
| 23 24 25 26 27 | 37 38 39 40 41 | 51 52 53 54 55 | 65 66 67 68 69 |
| Method 28 29<br>Units 30 31<br>DP 32 | Method 42 43<br>Units 44 45<br>DP 46 | Method 56 57<br>Units 58 59<br>DP 60 | Method 70 71<br>Units 72 73<br>DP 74 |

| Day 19 | Day 20 | St 21 | Hr 22 | 33 | 34 | 35 | 36 | 47 | 48 | 49 | 50 | 61 | 62 | 63 | 64 | 75 | 76 | 77 | 78 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | | | | | | | | | | | | | | | | | | |
| 0 | 2 | | | | | | | | | | | | | | | | | | |
| 0 | 3 | | | | | | | | | | | | | | | | | | |
| 0 | 4 | | | | | | | | | | | | | | | | | | |
| 0 | 5 | | | | | | | | | | | | | | | | | | |
| 0 | 6 | | | | | | | | | | | | | | | | | | |
| 0 | 7 | | | | | | | | | | | | | | | | | | |
| 0 | 8 | | | | | | | | | | | | | | | | | | |
| 0 | 9 | | | | | | | | | | | | | | | | | | |
| 1 | 0 | | | | | | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | | | | | | | |
| 1 | 2 | | | | | | | | | | | | | | | | | | |
| 1 | 3 | | | | | | | | | | | | | | | | | | |
| 1 | 4 | | | | | | | | | | | | | | | | | | |
| 1 | 5 | | | | | | | | | | | | | | | | | | |
| 1 | 6 | | | | | | | | | | | | | | | | | | |
| 1 | 7 | | | | | | | | | | | | | | | | | | |
| 1 | 8 | | | | | | | | | | | | | | | | | | |
| 1 | 9 | | | | | | | | | | | | | | | | | | |
| 2 | 0 | | | | | | | | | | | | | | | | | | |
| 2 | 1 | | | | | | | | | | | | | | | | | | |
| 2 | 2 | | | | | | | | | | | | | | | | | | |
| 2 | 3 | | | | | | | | | | | | | | | | | | |
| 2 | 4 | | | | | | | | | | | | | | | | | | |
| 2 | 5 | | | | | | | | | | | | | | | | | | |
| 2 | 6 | | | | | | | | | | | | | | | | | | |
| 2 | 7 | | | | | | | | | | | | | | | | | | |
| 2 | 8 | | | | | | | | | | | | | | | | | | |
| 2 | 9 | | | | | | | | | | | | | | | | | | |
| 3 | 0 | | | | | | | | | | | | | | | | | | |
| 3 | 1 | | | | | | | | | | | | | | | | | | |

DP → 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0

Figure AQT4-1 - continued. SAROAD Load Sheets (Page 3 of 5)



2

1 AGENCY

CITY NAME

SITE ADDRESS

PROJECT

TIME INTERVAL

STATE (2 3) AREA (4 5 6 7) SITE (8 9 10)

AGENCY (11) PROJECT (12 13)

TIME C (14)

YEAR (15 16) PERIOD (17 18)

NUMBER OF SAMPLES (19 20)

COMP TYPE (21) SAMPLE TIME (22)

| FILTER NUMBER | SAMPLE DATE | TOTAL AIR VOLUME $m^3$ | PARTICULATE CONC $\mu g\ m^3$ |
|---|---|---|---|
| | | | |
| | | | |
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| | | | |
| | | | |
| | | | |
| | TOTAL | | |
| | % FILTER | | |
| | EQUIVALENT AIR VOLUME $m^3$ | | |

ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AEROMETRIC DATA BANK
RESEARCH TRIANGLE PARK, N.C. 27711

OMB No 158 R0012
Approval expires 2/77.

SAROAD COMPOSITE DATA FORM.

THE REPORT IS REQUIRED BY LAW
42 USC 1857; 40 CFR 51

| PARAMETER NAME | METHOD | UNITS | | PARAMETER CODE METHOD UNITS DP | | VALUE |
|---|---|---|---|---|---|---|
| | | | (23 - 32) | | (33 - 36) | |
| | | | (37 - 46) | | (47 - 50) | |
| | | | (51 - 60) | | (61 - 64) | |
| | | | (65 - 74) | | (75 - 78) | |

| PARAMETER NAME | METHOD | UNITS | | PARAMETER CODE METHOD UNITS DP | | VALUE |
|---|---|---|---|---|---|---|
| | | | (23 - 32) | | (33 - 36) | |
| | | | (37 - 46) | | (47 - 50) | |
| | | | (51 - 60) | | (61 - 64) | |
| | | | (65 - 74) | | (75 - 78) | |

| PARAMETER NAME | METHOD | UNITS | | PARAMETER CODE METHOD UNITS DP | | VALUE |
|---|---|---|---|---|---|---|
| | | | (23 - 32) | | (33 - 36) | |
| | | | (37 - 46) | | (47 - 50) | |
| | | | (51 - 60) | | (61 - 64) | |
| | | | (65 - 74) | | (75 - 78) | |

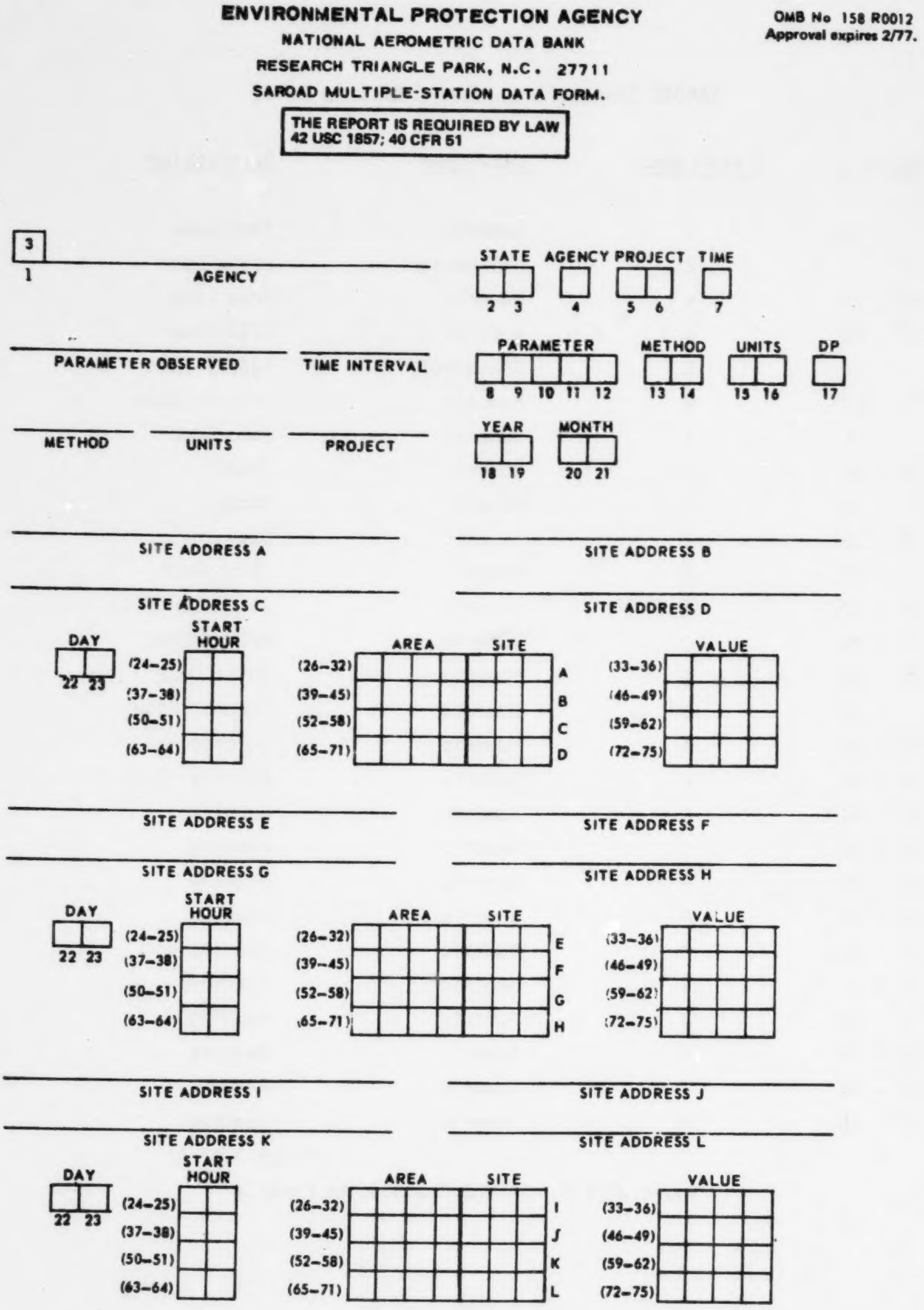
| PARAMETER NAME | METHOD | UNITS | | PARAMETER CODE METHOD UNITS DP | | VALUE |
|---|---|---|---|---|---|---|
| | | | (23 - 32) | | (33 - 36) | |
| | | | (37 - 46) | | (47 - 50) | |
| | | | (51 - 60) | | (61 - 64) | |
| | | | (65 - 74) | | (75 - 78) | |

| PARAMETER NAME | METHOD | UNITS | | PARAMETER CODE METHOD UNITS DP | | VALUE |
|---|---|---|---|---|---|---|
| | | | (23 - 32) | | (33 - 36) | |
| | | | (37 - 46) | | (47 - 50) | |
| | | | (51 - 60) | | (61 - 64) | |
| | | | (65 - 74) | | (75 - 78) | |

| PARAMETER NAME | METHOD | UNITS | | PARAMETER CODE METHOD UNITS DP | | VALUE |
|---|---|---|---|---|---|---|
| | | | (23 - 32) | | (33 - 36) | |
| | | | (37 - 46) | | (47 - 50) | |
| | | | (51 - 60) | | (61 - 64) | |
| | | | (65 - 74) | | (75 - 78) | |

Figure AQT4-1 - continued. SAROAD Load Sheets

(Page 4 of 5)



**ENVIRONMENTAL PROTECTION AGENCY**
NATIONAL AEROMETRIC DATA BANK
RESEARCH TRIANGLE PARK, N.C. 27711
SAROAD MULTIPLE-STATION DATA FORM.

OMB No 158 R0012
Approval expires 2/77.

THE REPORT IS REQUIRED BY LAW
42 USC 1857; 40 CFR 51

3
1
AGENCY

STATE 2 3 | AGENCY 4 | PROJECT 5 6 | TIME 7

PARAMETER OBSERVED
TIME INTERVAL

PARAMETER 8 9 10 11 12 | METHOD 13 14 | UNITS 15 16 | DP 17

METHOD
UNITS
PROJECT

YEAR 18 19 | MONTH 20 21

SITE ADDRESS A
SITE ADDRESS B
SITE ADDRESS C
SITE ADDRESS D

| DAY | START HOUR | AREA SITE | | VALUE |
|---|---|---|---|---|
| 22 23 | (24–25) | (26–32) | A | (33–36) |
| | (37–38) | (39–45) | B | (46–49) |
| | (50–51) | (52–58) | C | (59–62) |
| | (63–64) | (65–71) | D | (72–75) |

SITE ADDRESS E
SITE ADDRESS F
SITE ADDRESS G
SITE ADDRESS H

| DAY | START HOUR | AREA SITE | | VALUE |
|---|---|---|---|---|
| 22 23 | (24–25) | (26–32) | E | (33–36) |
| | (37–38) | (39–45) | F | (46–49) |
| | (50–51) | (52–58) | G | (59–62) |
| | (63–64) | (65–71) | H | (72–75) |

SITE ADDRESS I
SITE ADDRESS J
SITE ADDRESS K
SITE ADDRESS L

| DAY | START HOUR | AREA SITE | | VALUE |
|---|---|---|---|---|
| 22 23 | (24–25) | (26–32) | I | (33–36) |
| | (37–38) | (39–45) | J | (46–49) |
| | (50–51) | (52–58) | K | (59–62) |
| | (63–64) | (65–71) | L | (72–75) |

(Page 5 of 5)

Figure AQT4-1 - continued. SAROAD Load Sheets

SAROAD Transaction - Form 1 (Hourly Data)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Form Code |
| 2 - 3 | 2 | Alphanumeric | State Code |
| 4 - 7 | 4 | Numeric | Area Code |
| 8 - 10 | 3 | Numeric | Site Code |
| 11 | 1 | Alphabetic | Agency Code |
| 12 - 13 | 2 | Numeric | Project Code |
| 14 | 1 | Numeric | Time Code |
| 15 - 16 | 2 | Numeric | Year |
| 17 - 18 | 2 | Numeric | Month |
| 19 - 20 | 2 | Numeric | Day |
| 21 - 22 | 2 | Numeric | Start Hour |
| 23 - 27 | 5 | Numeric | Parameter Code |
| 28 - 29 | 2 | Numeric | Method Code |
| 30 - 31 | 2 | Numeric | Units Code |
| 32 | 1 | Numeric | Decimal Code |
| 33 - 36 | 4 | Numeric | Reading |
| 37 - 40 | 4 | Numeric | Reading |
| 41 - 44 | 4 | Numeric | Reading |
| 45 - 48 | 4 | Numeric | Reading |
| 49 - 52 | 4 | Numeric | Reading |
| 53 - 56 | 4 | Numeric | Reading |
| 57 - 60 | 4 | Numeric | Reading |
| 61 - 64 | 4 | Numeric | Reading |
| 65 - 68 | 4 | Numeric | Reading |
| 69 - 72 | 4 | Numeric | Reading |
| 73 - 76 | 4 | Numeric | Reading |
| 77 - 80 | 4 | Numeric | Reading |

(Page 1 of 4)

Figure AQT4-2. SAROAD Transaction Formats

SAROAD Transaction - Form 2 (Daily or Multiple-Parameter Data)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Form Code |
| 2 - 3 | 2 | Alphanumeric | State Code |
| 4 - 7 | 4 | Numeric | Area Code |
| 8 - 10 | 3 | Numeric | Site Code |
| 11 | 1 | Alphabetic | Agency Code |
| 12 - 13 | 2 | Numeric | Project Code |
| 14 | 1 | Alphanumeric | Time Code |
| 15 - 16 | 2 | Numeric | Year |
| 17 - 18 | 2 | Numeric | Month |
| 19 - 20 | 2 | Numeric | Day |
| 21 - 22 | 2 | Numeric | Start Hour |
| 23 - 27 | 5 | Numeric | Parameter Code |
| 28 - 29 | 2 | Numeric | Method Code |
| 30 - 31 | 2 | Numeric | Units Code |
| 32 | 1 | Numeric | Decimal Code |
| 33 - 36 | 4 | Numeric | Reading |
| 37 - 50 | 14 | | Repeat Columns 23-36 |
| 51 - 64 | 14 | | Repeat Columns 23-36 |
| 65 - 78 | 14 | | Repeat Columns 23-36 |
| 79 - 80 | 2 | | Unused |

(Page 2 of 4)

Figure AQT4-2 - continued. SAROAD Transaction Formats

SAROAD Transaction - Form 2 Composite Data

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 - 16 | 16 | | Same as Form 2 (non-composite) |
| 17 - 18 | 2 | Numeric | Composite Period |
| 19 - 20 | 2 | Numeric | Composite Number of Samples |
| 21 | 1 | Numeric | Composite Type |
| 22 | 1 | Alphanumeric | Composite Time Code |
| 23 - 80 | 58 | | Same as Form 2 (non-composite) |

(Page 3 of 4)

Figure AQT4-2 - continued. SAROAD Transaction Formats

## SAROAD Transaction - Form 3
## (Multiple-Station Data)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Form Code |
| 2 - 3 | 2 | Alphanumeric | State Code |
| 4 | 1 | Alphabetic | Agency Code |
| 5 - 6 | 2 | Numeric | Project Code |
| 7 | 1 | Alphanumeric | Time Code |
| 8 - 12 | 5 | Numeric | Parameter Code |
| 13 - 14 | 2 | Numeric | Method Code |
| 15 - 16 | 2 | Numeric | Units Code |
| 17 | 1 | Numeric | Decimal Code |
| 18 - 19 | 2 | Numeric | Year |
| 20 - 21 | 2 | Numeric | Month |
| 22 - 23 | 2 | Numeric | Day |
| 24 - 25 | 2 | Numeric | Start Hour |
| 26 - 29 | 4 | Numeric | Area Code |
| 30 - 32 | 3 | Numeric | Site Code |
| 33 - 36 | 4 | Numeric | Reading |
| 37 - 49 | 13 | | Repeat Columns 24-36 |
| 50 - 62 | 13 | | Repeat Columns 24-36 |
| 63 - 75 | 13 | | Repeat Columns 24-36 |
| 76 - 80 | 5 | | Unused |

(Page 4 of 4)

Figure AQT4-2 - continued. SAROAD Transaction Formats

```
//EPALMH04 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* CONVERT SAROAD TRANSACTIONS TO AQDHS-II TRANSACTIONS
//*
//TEST4A EXEC AQCVT10
//*
//* CONVERT TRANSACTIONS
//*
//CONVERT.OPTIONS DD *
NOLIST
/*
//CONVERT.INPUT DD *
S2
1373000997A052770802004310211072     0098
2373000997A05C751278384310211073 0040
7373000997A052770701004310111072 0001
 373000997A052770701004310111072 0001
1373000997A05D770701004310111072 0001
1373000997A052770701 04310111072 0001
1100001001E021710601004240111072 001 001 001 001 002 002 001 002 003 003 003 003
1100001001E021710601124240111072 004 006 002 001 001 000 000 000 000 000 000 000
1100001001E021710602004240111072 002 003 006 007 010 011 012 013 012 011 009 008
1100001001E021710602124240111072 006 006 006 006 006 003 001 004 006 008 007 007
1100001001E021710603004240111072 007 002 001 001 001 001 001 001 003 003 006 003
1100001001E021710603124240111072 002 003 003 006 010 011 011 012 013 016 016 016
1100001001E021710604004240111072 018 020 022 022 022 024 018 018 010 002 001 001
1100001001E021710604124240111072 001 001 001 001 001 001 001 001 001 001 002 002
1100001001E021710605004240111072 003 004 004 004 004 005 006 006 006 006 004 004
1100001001E021710605124240111072 003 003 003 003 003 006 018 020 034 044 054 060
1100001001E021710606004240111072 080 100 101 102 102 110 113 110 110 121 110 109
1100001001E021710606124240111072 080 080 090 090 099 099 099 100 100 100 121 122
1100001001E021710607004240111072 248 200 201 181 176 154 121 100 090 080 070 060
1100001001E021710607124240111072 040 030 020 010 009 008 007 006 006 006 006 006
1100001001E021710608004240111072 005 005 004 003 002 001 001 001 001 001 001 001
1100001001E021710608124240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710609004240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710609124240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710610004240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710610124240111072 002 002 002 002 002 002 002 002 002 002 002 002
```

(Remainder of transactions omitted)

```
//CONVERT.OUTPUT DD DISP=(NEW,CATLG,DELETE),
// DSN=CN.EPALMH.A087.CDHS.HQ.AQS.DATA.AQTRANS,UNIT=3330,
// VOLUME=SER=LMHTST,SPACE=(TRK,(5,2),RLSE)
```

Figure AQT4-3.  Run Stream

```
                              SAROAD TO AQDHS-II CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                  PAGE     1

PROGRAM NAME: ACVSARD (AQ0010)
REVISION LEVEL: 1-00
LAST UPDATE #: 20
DATE INCORPORATED: OCTOBER 31, 1978



OPTION IN EFFECT: NOLIST

7373000997A0527707010043101110720001
*** ACVSARD 003 ERROR - INVALID SAROAD FORM NUMBER, CARD REJECTED

 373000997A0527707010043101110720001
*** ACVSARD 004 ERROR - NON-NUMERIC SAROAD FORM NUMBER, CARD REJECTED

1373000997A0507707010043101110720001
*** ACVSARD 007 ERROR - INVALID TIME CODE, CARD REJECTED

1373000997A052770701 043101110720001
*** ACVSARD 005 ERROR - NON-NUMERIC START HOUR, CARD REJECTED


NUMBER OF INPUT SAROAD TRANSACTIONS:          658
NUMBER OF ACTION CARDS:                         1
NUMBER OF AQDHS-II TRANSACTIONS WRITTEN:      971
NUMBER OF DIAGNOSTIC MESSAGES:                  4
```

Figure AQT4-4. Procedure AQCVT10 -- program ACVSARD

## AQDHS-II TEST 5

## Create the Initial Master File Using the Converted Transactions

In this test run, an initial AQDHS-II master file is created using the cataloged procedure AQEMM10, which executes ASRTRAN (AQ0370), the master file input transaction sort program; AEDMSTR (AQ0060), the master file transaction edit program; ASRINTR (AQ0130), the master file internal transaction sort program; and AFMMSTR (AQ0100), the master file maintenance program.

ASRTRAN (AQ0370) sorts the input AQDHS-II master file transactions into the sequence required by AEDMSTR (AQ0060). All input transactions must be sorted by ASRTRAN (AQ0370) before they can be edited.

AEDMSTR (AQ0060) edits the input AQDHS-II master file transactions and converts those that pass the edit criteria into internal transactions which can be input to AFMMSTR (AQ0100) after being sorted by ASRINTR (AQ0130).

There are four formats for the AQDHS-II master file transactions: Form 1, Form 2, Form 3, and Form 4. The Form 1 transactions are used to enter multiple readings taken at less than daily intervals. Form 2 and Form 3 transactions are used for readings taken at daily or greater than daily intervals. Form 2 transactions allow readings for multiple parameters at a given site, whereas Form 3 transactions allow readings at multiple sites for a given parameter. Also, Form 2 transactions are used to enter composite data. Form 4 transactions are used to enter the special null codes (9980-9997) for daily and less than daily intervals. Refer to Figure AQT5-1 for the master file transaction formats and to Figure AQT5-2 for the master file transaction load sheets.

In the edit process, the function of each transaction is determined (i.e., to add, change, or delete information in the master file) and then the transaction is checked for the required information which corresponds to that function. In this test run, the function of the transactions is to create (or add) records in the AQDHS-II master file. The creation of a master file record requires at least one transaction with an action code of '2', the appropriate key information, and one or more readings. In some cases, multiple add transactions create one master file record; for example, up to eight hourly readings may be entered per transaction whereas a master file record may contain up to 24 readings.

The parameter and site files are also used as input to AEDMSTR (AQ0060) to check the master file transactions for valid parameter, method, and unit code combinations and valid site information.

The options in this program are used to specify if the warning-level error messages are to appear in the diagnostic report and if the input transactions which passed the edit are to be printed. In order to have the warning-level messages printed in the diagnostic report, the word FLAGW must appear between card columns 1 and 72 of the option card. Otherwise, the word NOFLAGW on the option card will suppress these messages. If the valid input transactions are to be printed, the word LIST must appear between card columns 1 and 72 of the option card. However, if this file is not to be printed, the word NOLIST should be on the card. The options can appear in any order as long as there is at least one space between options. The default values of NOFLAGW and NOLIST will be used to control printing when the options specified are invalid or an option card is not present in the run stream.

ASRINTR (AQ0130) sorts the master file internal transactions into the sequence required by AFMMSTR (AQ0100). All the master file internal transactions must be sorted by ASRINTR (AQ0130) before they can be used to create the master file.

AFMMSTR (AQ0100) creates and maintains the master file, which is a variable-length, sequential file. Each of the records in this file is designed to contain data for a particular parameter collected at a specific site. For a given site and parameter, a master file record could contain a day of less than daily data, a week of weekly data, a month of daily data, a year of monthly or quarterly data, or a composite reading.

The options in AFMMSTR (AQ0100) are used to determine if the warning-level error messages are to be present in the diagnostic report and if listings of the valid internal transactions and the records affected by AFMMSTR (AQ0100) on the old and new master files, are to be printed.

The option word FLAGW must be specified within columns 1 through 72 of the option card in order to have the warning-level messages printed in the diagnostic report. When the FLAGW option is not specified, its default, NOFLAGW, is in effect and no warning-level messages will be listed. This same result occurs when the word NOFLAGW is specified on the option card.

If the option word LIST appears within columns 1 through 72 of the option card, three listings will be produced: (1) a listing of the valid internal transactions, (2) a listing of the records on the old master file which were affected by AFMMSTR (AQ0100), and (3) a listing of the records on the new master file which were affected by AFMMSTR (AQ0100). Individual listings may be specified by the LISTTRAN, LISTOLD, and LISTNEW options. The LISTTRAN option will produce listing (1), the LISTOLD option will generate listing (2), and the LISTNEW option will produce listing (3). These three options can be specified in any combination and only the corresponding lists will be produced. If neither LISTTRAN, LISTOLD, LISTNEW, nor LIST is specified within columns 1 through 72 of the option card, the default option NOLIST will be in effect.

All of the options mentioned above, including FLAGW and NOFLAGW, can appear in any order and in any position within the first 72 columns of the option card provided there is at least one space between the options specified. The default values of NOFLAGW and NOLIST will be used to control printing when an option card is not present in the run stream.

The run stream for this test run contains the JCL necessary for creating an AQDHS-II master file. This run stream is shown in Figure AQT5-3.

The cataloged procedure executed by this run stream is AQEMM10. For the EDIT step, the user must supply the DD (data definition) information for the option card file and the input AQDHS-II master file transaction file. In this test run, the name of the input AQDHS-II transaction file is AQTRANS (which was created and stored on disk in Test 4). The options specified in the EDIT step are NOLIST and NOFLAGW. Since this test run creates the first AQDHS-II master file, there is obviously not an input master file to be accessed. This is why the old master file, AQSOLDMS, must be a dummy file in the UPDATE step. Also, the options specified in the UPDATE step of this test run are NOLIST and NOFLAGW. Through the use of substitutable parameters, the input parameter file is specified as AQPARM01 (created and stored on a disk in Test 1), the input site file is is specified as AQSITE01 (created and stored on disk in Test 2), and the new master file is named AQMST01N. Refer to Figure AQT5-4 for the sample output produced by this procedure.

AQDHS-II Transaction - Form 1 (Less-than-Daily Data)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Form Code |
| 2 - 3 | 2 | Numeric | State Code |
| 4 - 7 | 4 | Numeric | Area Code |
| 8 - 10 | 3 | Numeric | Site Code |
| 11 | 1 | Alphabetic | Agency Code |
| 12 - 13 | 2 | Numeric | Project Code |
| 14 | 1 | Numeric | Time Code |
| 15 - 16 | 2 | Numeric | Year |
| 17 - 18 | 2 | Numeric | Month |
| 19 - 20 | 2 | Numeric | Day |
| 21 - 22 | 2 | Numeric | Start Hour |
| 23 - 27 | 5 | Numeric | Parameter Code |
| 28 - 29 | 2 | Numeric | Method Code |
| 30 - 31 | 2 | Numeric | Units Code |
| 32 | 1 | Numeric | Decimal Code |
| 33 - 36 | 4 | Numeric | Reading |
| 37 - 40 | 4 | Numeric | Reading |
| 41 - 44 | 4 | Numeric | Reading |
| 45 - 48 | 4 | Numeric | Reading |
| 49 - 52 | 4 | Numeric | Reading |
| 53 - 56 | 4 | Numeric | Reading |
| 57 - 60 | 4 | Numeric | Reading |
| 61 - 64 | 4 | Numeric | Reading |
| 65 - 78 | 14 | Numeric | Unused |
| 79 | 1 | Alphabetic | Transaction Status Flag |
| 80 | 1 | Numeric | Action Code |

(Page 1 of 5)

Figure AQT5-1. Master File Transaction Formats

AQDHS-II Transaction - Form 2 (Daily or Greater-than-Daily Data)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Form Code |
| 2 - 3 | 2 | Numeric | State Code |
| 4 - 7 | 4 | Numeric | Area Code |
| 8 - 10 | 3 | Numeric | Site Code |
| 11 | 1 | Alphabetic | Agency Code |
| 12 - 13 | 2 | Numeric | Project Code |
| 14 | 1 | Alphanumeric | Time Code |
| 15 - 16 | 2 | Numeric | Year |
| 17 - 18 | 2 | Numeric | Month |
| 19 - 20 | 2 | Numeric | Day |
| 21 - 22 | 2 | Numeric | Start Hour |
| 23 - 27 | 5 | Numeric | Parameter Code |
| 28 - 29 | 2 | Numeric | Method Code |
| 30 - 31 | 2 | Numeric | Units Code |
| 32 | 1 | Numeric | Decimal Code |
| 33 - 36 | 4 | Numeric | Reading |
| 37 - 50 | 14 | | Repeat Columns 23-36 |
| 51 - 64 | 14 | | Repeat Columns 23-36 |
| 65 - 78 | 14 | | Repeat Columns 23-36 |
| 79 | 1 | Alphabetic | Transaction Status Flag |
| 80 | 1 | Numeric | Action Code |

(Page 2 of 5)

Figure AQT5-1 - continued. Master File Transaction Formats

AQDHS-II Transaction - Form 2 Composite Data

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 - 16 | 16 | | Same as Form 2 |
| 17 - 18 | 2 | Numeric | Composite Period |
| 19 - 20 | 2 | Numeric | Composite Number of Samples |
| 21 | 1 | Numeric | Composite Type |
| 22 | 1 | Alphanumeric | Composite Time Code* |
| 23 - 80 | 58 | | Same as Form 2 |

---

*Use SAROAD time code (Appendix A, Table 3, AQDHS-II User's Guide) instead of AQDHS-II time code.

(Page 3 of 5)

Figure AQT5-1 - continued. Master File Transaction Formats

## AQDHS-II Transaction - Form 3
## (Multiple Site for Daily or Greater-than-Daily Data)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Form Code |
| 2 - 3 | 2 | Numeric | State Code |
| 4 | 1 | Alphabetic | Agency Code |
| 5 - 6 | 2 | Numeric | Project Code |
| 7 | 1 | Alphanumeric | Time Code |
| 8 - 12 | 5 | Numeric | Parameter Code |
| 13 - 14 | 2 | Numeric | Method Code |
| 15 - 16 | 2 | Numeric | Units Code |
| 17 | 1 | Numeric | Decimal Code |
| 18 - 19 | 2 | Numeric | Year |
| 20 - 21 | 2 | Numeric | Month |
| 22 - 23 | 2 | Numeric | Day |
| 24 - 25 | 2 | Numeric | Start Hour |
| 26 - 29 | 4 | Numeric | Area Code |
| 30 - 32 | 3 | Numeric | Site Code |
| 33 - 36 | 4 | Numeric | Reading |
| 37 - 49 | 13 |  | Repeat Columns 24-36 |
| 50 - 62 | 13 |  | Repeat Columns 24-36 |
| 63 - 75 | 13 |  | Repeat Columns 24-36 |
| 76 - 78 | 3 |  | Unused |
| 79 | 1 | Alphabetic | Transaction Status Flag |
| 80 | 1 | Numeric | Action Code |

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Figure AQT5-1 - continued. Master File Transaction Formats

AQDHS-II Transaction Form 4 (Null Data)

| Column # | Field Length | Data Type | Description |
|---|---|---|---|
| 1 | 1 | Numeric | Form Code |
| 2 - 3 | 2 | Numeric | State Code |
| 4 - 7 | 4 | Numeric | Area Code |
| 8 - 10 | 3 | Numeric | Site Code |
| 11 | 1 | Alphabetic | Agency Code |
| 12 - 13 | 2 | Numeric | Project Code |
| 14 | 1 | Numeric | Time Code |
| 15 - 19 | 5 | Numeric | Parameter Code |
| 20 - 21 | 2 | Numeric | Method Code |
| 22 - 23 | 2 | Numeric | Units Code |
| 24 - 25 | 2 | Numeric | Beginning Year |
| 26 - 27 | 2 | Numeric | Beginning Month |
| 28 - 29 | 2 | Numeric | Beginning Day |
| 30 - 31 | 2 | Numeric | Ending Year |
| 32 - 33 | 2 | Numeric | Ending Month |
| 34 - 35 | 2 | Numeric | Ending Day |
| 36 - 39 | 4 | Numeric | Reading |
| 40 - 78 | 39 | | Unused |
| 79 | 1 | Alphabetic | Transaction Status |
| 80 | 1 | Numeric | Action Code |

(Page 5 of 5)

Figure AQT5-1 - continued. Master File Transaction Formats

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AGENCY_____________
SITE NAME_____________
PARAMETER_____________

### AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS–II)
### COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)
### FORMAT 1 – LESS THAN DAILY SAMPLING INTERVAL

BY__________
DATE__________
PAGE____OF___

|  | STATE | AREA | SITE | AGEN | PROJ | TIME | YEAR |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 4 | 8 | 11 | 12 | 14 | 15 16 |
| 1 |  |  |  |  |  |  |  |

| PARAMETER | METH | UNITS | DP |
|---|---|---|---|
| 23 | 28 | 30 | 32 |
|  |  |  |  |

| STATUS | ACTION |
|---|---|
| 79 | 80 |
|  |  |

| MO | DAY | START HOUR | READING 1 | READING 2 | READING 3 | READING 4 | READING 5 | READING 6 | READING 7 | READING 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | 19 | 21 22 | 33 | 37 | 41 | 45 | 49 | 53 | 57 | 61 64 |
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(Page 1 of 5)

Figure AQT5-2. Master File Transaction Load Sheets

AGENCY____
SITE____

# AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS–II)
## COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)
## FORMAT 2 – MULTIPLE PARAMETERS
## DAILY OR GREATER SAMPLING INTERVAL

BY____
DATE____
PAGE____ OF____

| | STATE | AREA | SITE | AGEN | PROJECT | TIME | YEAR | MONTH |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 4 | 8 | 11 | 12 | 14 | 15 | 17 18 |
| 2 | | | | | | | | |

| STATUS | ACTION |
|---|---|
| 79 | 80 |
| | |

| PARAMETER CODE | PARAMETER CODE | PARAMETER CODE | PARAMETER CODE |
|---|---|---|---|
| 23 27 | 37 41 | 51 55 | 65 69 |
| | | | |

| METHOD | UNITS | DP | METHOD | UNITS | DP | METHOD | UNITS | DP | METHOD | UNITS | DP |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | 30 | 32 | 42 | 44 | 46 | 56 | 58 | 60 | 70 | 72 | 74 |
| | | | | | | | | | | | |

| DAY | START HOUR | READING | READING | READING | READING |
|---|---|---|---|---|---|
| 19 20 | 21 22 | 33 36 | 47 50 | 61 64 | 75 78 |
| 01 | | | | | |
| 02 | | | | | |
| 03 | | | | | |
| 04 | | | | | |
| 05 | | | | | |
| 06 | | | | | |
| 07 | | | | | |
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Figure AQT5-2 - continued. Master File Transaction Load Sheets (Page 2 of 5)

AGENCY________
SITE________

## AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS–II)
## COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)
## FORMAT 2 – COMPOSITE DATA

BY ____________
DATE ____________
PAGE ______OF____

|  | STATE | AREA | SITE | AGEN | PROJECT | TIME | YEAR | PERIOD | NUMBER OF SAMPLES | COMP TYPE | SAM PLE TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 2 | 2 | 4 | 8 | 11 | 12 | 14 C | 15 | 17 18 | 19 | 21 | 22 |

| STATUS | ACTION |
|---|---|
| 79 | 80 |

| PARAMETER CODE | PARAMETER CODE | PARAMETER CODE | PARAMETER CODE |
|---|---|---|---|
| 23 27 | 37 41 | 51 55 | 65 69 |

| METHOD | UNITS | DP | METHOD | UNITS | DP | METHOD | UNITS | DP | METHOD | UNITS | DP |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | 30 | 32 | 42 | 44 | 46 | 56 | 58 | 60 | 70 | 72 | 74 |

| READING | READING | READING | READING |
|---|---|---|---|
| 33 36 | 47 50 | 61 64 | 75 78 |
|  |  |  |  |
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Figure AQT5-2 - continued Master File Transaction Load Sheets (Page 3 of 5)

AGENCY ________

AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS–II)
COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)
FORMAT 3 – MULTIPLE SITE (STATION)
DAILY OR GREATER SAMPLING INTERVAL

BY ________
DATE ________
PAGE ____ OF ____

| | STATE | AGEN | PROJECT | TIME | PARAMETER CODE | METHOD | UNITS | DP | YEAR | MONTH |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 4 | 5 6 | 7 | 8 12 | 13 | 15 | 17 | 18 | 20 |
| 3 | | | | | | | | | | |

| STATUS | ACTION |
|---|---|
| 79 | 80 |
| | |

| START HOUR | AREA | SITE | START HOUR | AREA | SITE | START HOUR | AREA | SITE | START HOUR | AREA | SITE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 26 29 | 30 32 | 37 | 39 42 | 43 45 | 50 | 52 55 | 56 58 | 63 | 65 68 | 69 71 |
| | | | | | | | | | | | |

| DAY | READING | READING | READING | READING |
|---|---|---|---|---|
| 22 23 | 33 36 | 46 49 | 59 62 | 72 75 |
| 0 1 | | | | |
| 0 2 | | | | |
| 0 3 | | | | |
| 0 4 | | | | |
| 0 5 | | | | |
| 0 6 | | | | |
| 0 7 | | | | |
| 0 8 | | | | |
| 0 9 | | | | |
| 1 0 | | | | |
| 1 1 | | | | |
| 1 2 | | | | |
| 1 3 | | | | |
| 1 4 | | | | |
| 1 5 | | | | |
| 1 6 | | | | |
| 1 7 | | | | |
| 1 8 | | | | |
| 1 9 | | | | |
| 2 0 | | | | |
| 2 1 | | | | |
| 2 2 | | | | |
| 2 3 | | | | |
| 2 4 | | | | |
| 2 5 | | | | |
| 2 6 | | | | |
| 2 7 | | | | |
| 2 8 | | | | |
| 2 9 | | | | |
| 3 0 | | | | |
| 3 1 | | | | |

EPA (DUR) 425

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Figure AQT5-2 - continued. Master File Transaction Load Sheets

AGENCY ________
SITE ________
PARAMETER ________

AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS-II)
COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)
FORMAT 4 - NULL DATA

BY ________
DATE ________
PAGE ____ OF ____

|  | STATE | AREA | SITE | AGENCY | PROJ | TIME | PARAMETER | METH | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 4 | 8 | 11 | 12 | 14 | 15 | 20 | 22 |
| 4 |  |  |  |  |  |  |  |  |  |

| STATUS | ACTION |
|---|---|
| 79 | 80 |
|  | A |

| BEG YEAR | BEG MONTH | BEG DAY | END YEAR | END MONTH | END DAY | READING |
|---|---|---|---|---|---|---|
| 24 | 26 | 28 | 30 | 32 | 34 | 36 |
|  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

(Page 5 of 5)

Figure AQT5-2 - continued. Master File Transaction Load Sheets

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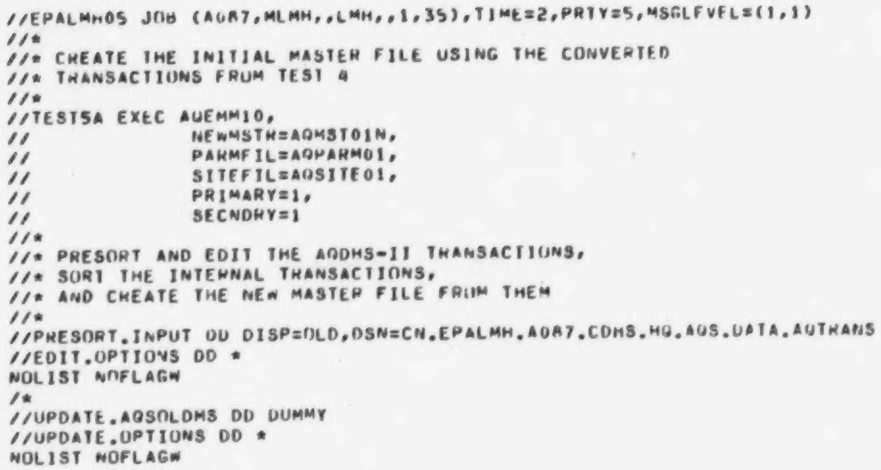


```
//EPALMH05 JOB (AQ87,MLMH,,LMH,,1,35),TIME=2,PRTY=5,MSGLEVEL=(1,1)
//*
//* CREATE THE INITIAL MASTER FILE USING THE CONVERTED
//* TRANSACTIONS FROM TEST 4
//*
//TEST5A EXEC AQEMM10,
//               NEWMSTR=AQMST01N,
//               PARMFIL=AQPARM01,
//               SITEFIL=AQSITE01,
//               PRIMARY=1,
//               SECNDRY=1
//*
//* PRESORT AND EDIT THE AQDMS-II TRANSACTIONS,
//* SORT THE INTERNAL TRANSACTIONS,
//* AND CREATE THE NEW MASTER FILE FROM THEM
//*
//PRESORT.INPUT DD DISP=OLD,DSN=CN.EPALMH.AQ87.CDMS.HQ.AQS.DATA.AQTRANS
//EDIT.OPTIONS DD *
NOLIST NOFLAGW
/*
//UPDATE.AQSOLDMS DD DUMMY
//UPDATE.OPTIONS DD *
NOLIST NOFLAGW
```

Figure AQT5-3. Run Stream

```
                       AQDHS-II MASTER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT


PROGRAM NAME: ASRTRAN (AQ0370)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980



NUMBER OF INPUT TRANSACTIONS:                   971
NUMBER OF OUTPUT TRANSACTIONS:                1,054
NUMBER OF INPUT FORM 3 TRANSACTIONS:             24
NUMBER OF OUTPUT FORM 3 TRANSACTIONS:           112
```

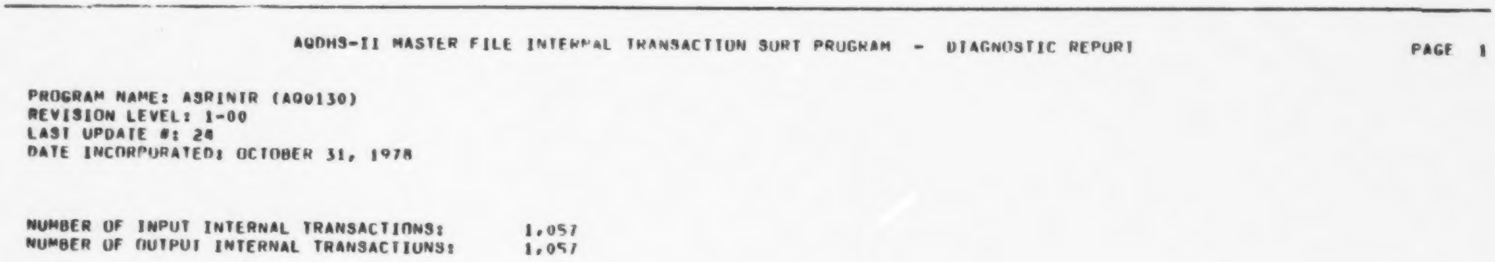
(Page 1 of 5)

Figure AQT5-4. Procedure AQEMM10 -- program ASRTRAN

```
                    AQDMS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT              PAGE     1

PROGRAM NAME: AEDMSTR (AQ0060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: NOLIST NOFLAGW


INPUT TRANSACTIONS              ERRORS

1100001001F02171062208424011107 2                  248 200 201 181               2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 49 - READING EXCEEDS MAXIMUM PERMITTED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 57 - READING EXCEEDS MAXIMUM PERMITTED

1100001001E021710607004240111072 248 200 201 181 176 154 121 100                 2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 41 - READING EXCEEDS MAXIMUM PERMITTED

2340001003A068770326004240191010945 0                                            2
          *** AEDMSTR 043 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

1340002001D05176030300424011407058 40                                            2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

337A059612022128265030600254099 2-045                                            2
          *** AEDMSTR 047 ERROR - COLUMN 26 - INVALID AREA CODE                     - GROUP-01 REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

NUMBER OF TRANSACTIONS READ:                     1,059
NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:    1,053
NUMBER OF INTERNAL TRANSACTIONS CREATED:         1,057
NUMBER OF WARNING MESSAGES:                         52
NUMBER OF CONDITIONAL MESSAGES:                      6
NUMBER OF ERROR MESSAGES:                            2
NUMBER OF ABORT MESSAGES:                            0
```

(Page 2 of 5)

Figure AQT5-4. Procedure AQEMM10 -- program AEDMSTR



```
                    AQDHS-II MASTER FILE INTERNAL TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE  1

PROGRAM NAME: ASRINTR (AQ0130)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT INTERNAL TRANSACTIONS:        1,057
NUMBER OF OUTPUT INTERNAL TRANSACTIONS:       1,057
```

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Figure AQT5-4. Procedure AQEMM10 -- program ASRINTR

```
                                        AUDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                  PAGE      1

PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                     TABLE # 1
          SIGNED                        LAST DIGIT
          NUMBER                        OF NUMBER
                                        PRINTED
---------------------------------------------------
              -9                                 R
              -8                                 Q
              -7                                 P
              -6                                 O
              -5                                 N
              -4                                 M
              -3                                 L
              -2                                 K
              -1                                 J
              -0
              +0
              +1                                 A
              +2                                 B
              +3                                 C
              +4                                 D
              +5                                 E
              +6                                 F
              +7                                 G
              +8                                 H
              +9                                 I

THIS TABLE SHOWS THE PRINT CHARACTERS
FOR THE LAST DIGIT OF SIGNED DATA VALUES
WHICH MAY APPEAR IN THE AUDHS-II
MASTER FILE MAINTENANCE OUTPUT REPORTS

OPTIONS IN EFFECT:  NOLIST NOFLAGW                                                                         38.
```

(Page 4 of 5)

Figure AQT5-4. Procedure AQEMM10 -- program AFMMSTR

```
                     AUDIS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                         PAGE    2

TRANSACTION                 ERRORS/ACTION

21      37186302030009997A05174431021107080200            004            0002
         *** AFMMSTR 001 ERROR - READING 04 - ATTEMPT TO ADD DATA TO EXISTING READING - DATA REJECTED

21      37186302030009997A05174431021107080208            004000100030002000O
         *** AFMMSTR 001 ERROR - READING 09 - ATTEMPT TO ADD DATA TO EXISTING READING - DATA REJECTED
         *** AFMMSTR 001 ERROR - READING 12 - ATTEMPT TO ADD DATA TO EXISTING READING - DATA REJECTED

21      37186302030009997A05174431021107080800            3080400060005020700100210054000030O2
         *** AFMMSTR 001 ERROR - READING 05 - ATTEMPT TO ADD DATA TO EXISTING READING - DATA REJECTED

21      37186302030009997A05174431021107080808            304208020802080104O
         *** AFMMSTR 001 ERROR - READING 11 - ATTEMPT TO ADD DATA TO EXISTING READING - DATA REJECTED

NUMBER OF INPUT INTERNAL TRANSACTIONS:                     1,057
NUMBER OF INPUT MASTER FILE RECORDS:                           0
NUMBER OF MASTER FILE RECORDS FLAGGED FOR DELETION:            0
NUMBER OF MASTER FILE RECORDS ADDED:                         334
NUMBER OF OUTPUT MASTER FILE RECORDS:                        334
NUMBER OF WARNING MESSAGES:                                    0
NUMBER OF CONDITIONAL MESSAGES:                                0
NUMBER OF ERROR MESSAGES:                                      5
NUMBER OF ABORT MESSAGES:                                      0
NUMBER OF DISASTER MESSAGES:                                   0

PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

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Figure AQT5-4.  Procedure AQEMM10 -- program AFMMSTR

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## AQDHS-II TEST 6

### Produce a Detailed Report of the Master File

In this test run, a detailed report of the AQDHS-II master file is generated using the cataloged procedures AQSRS10 and AQRPM20. AQSRS10 executes ASRSTFL (AQ0360), the site file sort program; AQRPM20 executes ARPMSTR (AQ0230), the master file detailed report program.

ASRSTFL (AQ0360) sorts the input site file into master file site key order. This output sorted file is used as input to ARPMSTR (AQ0230). A normal, unsorted AQDHS-II site file can not be used as input to ARPMSTR (AQ0230) because its record length is different from that of the sorted site file.

ARPMSTR (AQ0230) formats and displays the data from the master file. Information for the page headings is obtained from the parameter, sorted site, and parameter standards files which are input to the program.

There are several output formats used depending upon the type of data (as specified by the time-code in the master file record) to be displayed. Less than daily data are displayed on a site basis in a table (maximum of two pages for each month of data) with the hours of the day as column headings and the days of the month as row headings. Each year of daily data is reported in a one-page table with months as column headings and the days of the months as row headings. Each year of weekly data is also described in a one-page table with months as column headings and weeks of the month as row headings. Monthly and quarterly data are displayed with a year of data per page on a site basis (each site is on a separate page) under column headings of month and quarter, respectively. Also, one year of data is shown per page for each type of composite data.

The option card may contain statements for either a display option or a summary option. These statements may appear on the option card in any order, but must be preceded or followed by at least one blank. (Note that a keyword which starts in card column 1 is considered to be preceded by a blank.) The statements may appear anywhere on the card except in columns 73 through 80.

The summary option allows the user to specify the method for summarizing the readings within each table. The keywords for the summary option statement are MEAN and SUM with the following meanings:

MEAN: Print the number of readings, the maximum reading and the mean for each column and row.

SUM: Print the number of readings and the sum of the readings for each row. (Column totals are not printed with this option.)

If neither of these options appear on the option card, or if an option card is not present in the run stream, the program will assume the MEAN option.

The display option allows the user to specify whether all readings should be printed or only those meeting the display criteria specified. The display option statement consists of a keyword, an optional negation flag, a relational operator and a threshold value in that order. Each element of the display option statement must be preceded and followed by at least one blank. The definition of the elements of the statement are:

Keyword: DISPLAY

Negation Flag: N or Blank

Relational Operator: >, =, < (greater than, equal to, or less than).

Threshold Value: A number in the range ¯999 to 9997. (Leading zeros in front of the decimal are not required. If the threshold value contains no decimal point, a decimal point will be assumed to be right justified in the field.)

The default value for the display option is DISPLAY N > 9997 and will be used when the display option is invalid or an option card is not present in the run stream.

The run stream for this test run contains the JCL necessary for producing a detailed report of the AQDHS-II master file. This run stream is shown in Figure AQT6-1.

The first cataloged procedure executed by this run stream is AQSRS10. Substitutable parameters are used to specify AQSITE01 as the input site file (created and stored on disk in Test 2) and AQSTESRT as the sorted site file. Refer to Figure AQT6-2 for the sample output produced by this procedure.

The second cataloged procedure executed by this run stream is AQRPM20. Through the use of substitutable parameters, the input master file is specified as AQMST01N (created and stored on Disk in Test 5), the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), the input site file is specified as AQSTESRT (created and stored on disk in the first step of this run stream), and the input parameter standards file is specified as AQSTND01 (created and stored on disk in Test 3). The user must supply the DD (data definition) information for the option card file. The options specified in the REPORT step of this test run are MEAN and DISPLAY N > 9997. Refer to Figure AQT6-3 for the sample output produced by this procedure.

```
//EPALMH06 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* PRODUCE A DETAILED LISTING OF AQMST01N,
//* THE MASTER FILE CREATED IN TEST 5
//*
//TEST6A EXEC AQSRS10,
//             SITEFIL=AQSITE01,
//             SORTFIL=AQSTESRT,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* PRESORT THE INPUT SITE FILE, AQSITE01, INTO
//* MASTER FILE SITE KEY ORDER
//*
//TEST6B EXEC AQRPM20,
//              MSTRFIL=AQMST01N,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSTESRT,
//              STANFIL=AQSTND01
//*
//* PRODUCE THE REPORT OF AQMST01N
//*
//REPORT.OPTIONS DD *
MEAN DISPLAY N > 9997
/*
```

Figure AQT6-1.  Run Stream

```
                                 AQDHS-II SITE FILE SORT PROGRAM -DIAGNOSTIC REPORT                                  PAGE  1

PROGRAM NAME: ASRSTFL (AQ0360)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT RECORDS:               59
NUMBER OF OUTPUT RECORDS:              59
```

Figure AQT6-2. Procedure AQSRS10 -- program ASRSTFL

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```
                          AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE    1

PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

USER-SPECIFIED OPTION: MEAN DISPLAY N > 9997


NUMBER OF OPTION STATEMENTS READ:                          2
NUMBER OF MASTER FILE RECORDS READ:                      334
NUMBER OF REPORT PAGES WRITTEN:                           71
NUMBER OF ERRORS DETECTED:                                 0
```

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Figure AQT6-3. Procedure AQPRM20 -- program ARPMSTR

```
STATE:  OKLAHOMA (37)                          AQDHS-II AIR QUALITY DATA REPORT                                      PAGE    80
                                                        DISPLAY N>9997

AQCR:    186      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE       COLLECTION METH:    INSTRUMENTAL               YEAR:  1977
COUNTY: 3020      PROJECT:    SPECIAL STUDIES                      ANALYSIS METHOD:    PYRANOMETER                MONTH:  AUGUST
AREA:   2260      PARAMETER:  SOLAR RADIATION                      SAMPLING INTERVAL:  01 HOURS                   MIN DET:       1
SITE:    995      UNITS:      LANGLEYS                             SARUAD KEY:         372260995A0518             UNITS CODE: 18
SKIATOOK LAKE                            TULSA                     KEY-1: 37186302022260995A05177 KEY-2: 633011118 KEY-3: 080400

                                                      HOUR

DAY      00       01       02       03       04       05       06       07       08       09       10       11

01
02
03
04      0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.02     0.03     0.36     0.72     0.91
05      0.00     0.00     0.00     0.00     0.00     0.01     0.12     0.42     0.50     0.93     0.62     1.14
06      0.00     0.00     0.00     0.00     0.00     0.01     0.10     0.30     0.36     0.38     0.88     1.38
07      0.00     0.00     0.00     0.00     0.00     0.02     0.15     0.44     0.72     0.98     1.21     1.34
08      0.00     0.00     0.00     0.00     0.00     0.02     0.14     0.30     0.68     0.98     1.21     1.37
09      0.00     0.00     0.00     0.00     0.00     0.02     0.15     0.48     0.68     0.96     1.16     1.26
10      0.00     0.00     0.00     0.00     0.00     0.01     0.16     0.46     0.70     0.80     1.09     1.23
11      0.00     0.00     0.00     0.00     0.00     0.02     0.03     0.25     0.52     0.32     0.48     0.91
12      0.00     0.00     0.00     0.00     0.00     0.00     0.04     0.20     0.31     0.51     0.73     0.85
13      0.00     0.00     0.00     0.00     0.00     0.00     0.04              0.42     0.14     0.03     0.14
14      0.00     0.00     0.00     0.00     0.00     0.01     0.08     0.18     0.40     0.89     1.16     1.31
15      0.00     0.00     0.00     0.00     0.00     0.00     0.11     0.38     0.66     0.94
16      0.00     0.00     0.00     0.00     0.00     0.00     0.08     0.27     0.40     0.59     1.06     1.27
17      0.00     0.00     0.00     0.00     0.00     0.00     0.01     0.06     0.16     0.16     0.21     0.17
18      0.00     0.00     0.00     0.00     0.00     0.00     0.12     0.40     0.70     0.97     1.12     1.16
19      0.00     0.00     0.00     0.00     0.00     0.00     0.03     0.05     0.10     0.16     0.20     0.18
20      0.00     0.00     0.00     0.00     0.00     0.00     0.03     0.18     0.32     0.54     1.08
21      0.00     0.00     0.00     0.00     0.00     0.00     0.05     0.20     0.42     0.24     0.51     0.76
22      0.00     0.00     0.00     0.00     0.00     0.00     0.10     0.40     0.67     0.88     0.84     1.02
23      0.00     0.00     0.00     0.00     0.00     0.00     0.03     0.32     0.45     0.84     0.63     1.21
24      0.00     0.00     0.00     0.00     0.00     0.00     0.06              0.68     0.70     0.84     1.10
25      0.00     0.00     0.00     0.00     0.00     0.00     0.10     0.24     0.43     0.86     1.10     1.16
26      0.00     0.00     0.00     0.00     0.00     0.00     0.10     0.36     0.68     0.96     1.14     1.26
27      0.00     0.00     0.00     0.00     0.00     0.00     0.11     0.32     0.74     1.00     1.22     1.38
28      0.00     0.00     0.00     0.00     0.00     0.00     0.02     0.10     0.04     0.05     0.08     0.09
29      0.00     0.00     0.00     0.00     0.00     0.00     0.02     0.07     0.24     0.32     0.42     0.40
30      0.00     0.00     0.00     0.00     0.00     0.00     0.10     0.20     0.51     0.83     1.06     1.30
31      0.00     0.00     0.00     0.00     0.00     0.00     0.12     0.24     0.65     0.72     1.16     1.08

NO        28       28       28       28       28       28       28       26       28       28       27       26

MEAN      .0       .0       .0       .0       .0    .0002    .0785     .263    .4703    .6432    .8133    .9761

MAX     0.00     0.00     0.00     0.00     0.00     0.02     0.16     0.48     0.74     1.00     1.22     1.38
```

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Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  OKLAHOMA (37)                          AQDHS-II AIR QUALITY DATA REPORT                                          PAGE    41
                                                              DISPLAY N>9997

AQCR:    186       AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE          COLLECTION METH:    INSTRUMENTAL                  YEAR:  1977
COUNTY: 3020       PROJECT:    SPECIAL STUDIES                         ANALYSIS METHOD:    PYRANOMETER                   MONTH:  AUGUST
AREA:   2260       PARAMETER:  SOLAR RADIATION                         SAMPLING INTERVAL: 01 HOURS                       MIN DET:       1
SITE:    995       UNITS:      LANGLEYS                                SAROAD KEY:         372260995A0518                UNITS CODE: 18
SKIATOOK LAKE                                   TULSA                  KEY-1: 37186302022260995A05177 KEY-2: 633011118 KEY-3: 080400

                                                        HOUR

DAY        12       13       14       15       16       17       18       19       20       21       22       23   NO.     MEAN     MAX

01                                                                                                                   0
02                                                                                                                   0
03                                                                                                                   0
04       0.78     0.86     1.08     0.72              0.36     0.10     0.01     0.00     0.00     0.00     0.00    23    .2586    1.08
05       1.02     0.66     0.74     0.44     0.46     0.21     0.08     0.04     0.00     0.00     0.00     0.00    24    .3079    1.14
06       1.30     0.96     0.48     0.52     0.70     0.38     0.12     0.01     0.00     0.00     0.00     0.00    24    .3283    1.38
07       1.43     1.36     1.16     0.97     0.66     0.38     0.10     0.02     0.00     0.00     0.00     0.00    24    .4558    1.43
08       1.44     1.42     1.22     0.92     0.70     0.39     0.11     0.01     0.00     0.00     0.00     0.00    24    .4545    1.44
09       1.31     1.33     1.08     0.93     0.72     0.39     0.11     0.00     0.00     0.00     0.00     0.00    24    .4408    1.33
10       1.19     1.41     1.23     0.73     0.21     0.28     0.07     0.01     0.00     0.00     0.00     0.00    24    .3991    1.41
11       0.63     0.52     0.59     0.32     0.23     0.13     0.03     0.01     0.00     0.00     0.00     0.00    24    .2079    0.91
12       0.54     0.44     0.35     0.40     0.29     0.16     0.05     0.00     0.00     0.00     0.00     0.00    24    .2029    0.85
13       0.05     0.18     0.42     0.54     0.42     0.33     0.08     0.02     0.00     0.00     0.00     0.00    23    .1221    0.54
14       1.30     0.64     1.11     0.53     0.02     0.00     0.02     0.00     0.00     0.00     0.00     0.00    24    .3187    1.31
15       1.33     1.30     1.15     0.93     0.64     0.35     0.08     0.01     0.00     0.00     0.00     0.00    22    .3581    1.33
16       1.23     1.08     0.89     0.74     0.62     0.10     0.03     0.00     0.00     0.00     0.00     0.00    24    .3483    1.27
17       0.22     0.35     0.52     0.40     0.20     0.30     0.12     0.01     0.00     0.00     0.00     0.00    24    .1204    0.52
18       1.16     0.52     0.28     0.31     0.19     0.12     0.03     0.01     0.00     0.00     0.00     0.00    24    .2954    1.16
19       0.40     0.40              0.20     0.10     0.03     0.00     0.00     0.00     0.00     0.00     0.00    23    .0804    0.40
20       1.38     1.16     0.90     0.84     0.58     0.30     0.08     0.01     0.00     0.00     0.00     0.00    23    .3217    1.38
21       0.76     1.16     1.10     0.93     0.59     0.33     0.08     0.01     0.00     0.00     0.00     0.00    24    .2975    1.16
22       0.98     1.08     1.08     0.90     0.52     0.31     0.13     0.02     0.00     0.00     0.00     0.00    24     .372    1.08
23       1.33     1.24     1.12     0.76     0.58     0.38     0.12     0.02     0.00     0.00     0.00     0.00    24    .3762    1.33
24       1.03     0.92     0.84     0.70     0.58     0.38     0.06     0.00     0.00     0.00     0.00     0.00    23     .343    1.10
25       0.98     1.00     1.02     0.88     0.61     0.30     0.07     0.02     0.00     0.00     0.00     0.00    24    .3654    1.16
26       1.24     1.12     1.08     0.84     0.61     0.24     0.07     0.00     0.00     0.00     0.00     0.00    24    .4041    1.26
27       1.41     1.30     1.14     0.90     0.66     0.28     0.06     0.00     0.00     0.00     0.00     0.00    24    .4383    1.41
28       0.18     0.18     0.30     0.14     0.12     0.06     0.02     0.00     0.00     0.00     0.00     0.00    24    .0575    0.30
29       0.80     0.84     0.62     0.78     0.56     0.20     0.08     0.00     0.00     0.00     0.00     0.00    24    .2229    0.84
30       1.24     1.18     1.04     0.84     0.52     0.28     0.07     0.00     0.00     0.00     0.00     0.00    24     .382    1.30
31       1.22     1.12     1.02     0.82     0.58     0.28     0.05     0.00     0.00     0.00     0.00     0.00    24    .3775    1.22

NO         28       28       27       28       27       28       28       28       28       28       28       28   665

MEAN    .9957    .9189    .8725     .676    .4692    .2589    .0721    .0085       .0       .0       .0       .0             .3097

MAX      1.44     1.42     1.23     0.97     0.72     0.39     0.13     0.04     0.00     0.00     0.00     0.00                      1.44
```

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Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                   PAGE   21
                                                         DISPLAY N>9997

AQCR:    169      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:    TAPE SAMPLER             YEAR:  1974
COUNTY: 0960      PROJECT:    EPISODE MONITORING                     ANALYSIS METHOD:    TRANSMITTANCE            MONTH:  FEBRUARY
AREA:    0001     PARAMETER:  SOILING INDEX (COH/1000LF)             SAMPLING INTERVAL: 02 HOURS                  MIN DET:     .01
SITE:    001      UNITS:      COHS/1000 LINEAR FEET                  SAROAD KEY:          340001001A0616          UNITS CODE: 09
YADKIN ROAD                                                          KEY-1: 3416909600001001A06274 KEY-2: 112018109 KEY-3: 020101

                                                          HOUR

DAY     01      03      05      07      09      11      13      15      17      19      21      23   NO.   MEAN    MAX

01      0.1     0.1     0.2     0.3     0.5     0.8     0.3     2.1                                   8     .55    2.1
02                                                                                                    0
03                                                                                                    0
04      0.2     0.2     0.4     0.6     1.0     1.6     2.6     4.2                                   8    1.35    4.2
05                                                                                                    0
06                                                                                                    0
07                                                                                                    0
08      0.5     0.5     1.0     1.5     2.5     4.0     1.5     0.5                                   8    1.5     4.0
09                                                                                                    0
10                                                                                                    0
11                                                                                                    0
12      0.8     0.8     1.6     2.4     4.0     1.4     0.4     1.8                                   8    1.65    4.0
13                                                                                                    0
14                                                                                                    0
15                                                                                                    0
16                                                                                                    0
17                                                                                                    0
18      2.1     2.1     4.2     1.3     0.5     1.8     2.3     4.1                                   8    2.3     4.2
19                                                                                                    0
20                                                                                                    0
21                                                                                                    0
22                                                                                                    0
23                                                                                                    0
24                                                                                                    0
25                                                                                                    0
26                                                                                                    0
27                                                                                                    0
28      3.7     3.7     2.8     1.7     4.5     1.2     0.7     1.9                                   8    2.525   4.5

NO        6       6       6       6       6       6       6       6       0       0       0       0  48

MEAN  1.233   1.233     1.7     1.3   2.167     1.8     1.3   2.433                                        1.646

MAX     3.7     3.7     4.2     2.4     4.5     4.0     2.6     4.2                                                4.5
```

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Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                         AQDHS-II AIR QUALITY DATA REPORT                                          PAGE    22
                                                            DISPLAY N>9997

AQCR:    169       AGENCY:      EPA - ATMOSPHERIC SURVEILLANCE        COLLECTION METH:    BUCKET; JAR                     YEAR:  1974
COUNTY: 0960       PROJECT:     EPISODE MONITORING                    ANALYSIS METHOD:    GRAVIMETRIC (APCA)              MONTH:  MARCH
AREA:   0001       PARAMETER:   TOTAL SETTLED PARTICULATE             SAMPLING INTERVAL: 03 HOURS                         MIN DET:    1.43
SITE:   001        UNITS:       TONS/SQUARE MILE-MONTH                SAROAD KEY:         340001001A0616                  UNITS CODE: 90
YADKIN ROAD                                                           KEY-1: 341690960000100 1A06374 KEY-2: 211017190 KEY-3: 030102


                                      HOUR

DAY      02         05         08         11         14         17         20          23    NO.    MEAN      MAX

01      0.01       0.01       0.02       0.03       0.05       0.08       0.03       0.21    8     .055     0.21
02                                                                                           0
03      0.01       0.01       0.02       0.03       0.05       0.08       0.03       0.21    8     .055     0.21
04                                                                                           0
05                                                                                           0
06      0.02       0.02       0.04       0.06       0.10       0.16       0.26       0.42    8     .135     0.42
07                                                                                           0
08                                                                                           0
09                                                                                           0
10      0.03       0.03       0.06       0.09       0.15       0.24       0.39       0.13    8      .14     0.39
11                                                                                           0
12      0.05       0.05       0.10       0.15       0.25       0.40       0.15       0.05    8      .15     0.40
13      0.08       0.08       0.16       0.24       0.40       0.14       0.04       0.18    8     .165     0.40
14      0.13       0.13       0.26       0.39       0.15       0.04       0.19       0.23    8      .19     0.39
15      0.21       0.21       0.42       0.13       0.05       0.18       0.23       0.41    8      .23     0.42
16                                                                                           0
17                                                                                           0
18      0.33       0.33       0.18       0.02       0.20       0.22       0.42       0.14    8      .23     0.42
19                                                                                           0
20                                                                                           0
21                                                                                           0
22      0.04       0.04       0.10       0.15       0.25       0.40       0.15       0.05    8    .1475     0.40
23      0.37       0.37       0.28       0.17       0.45       0.12       0.07       0.19    8    .2525     0.45
24                                                                                           0
25                                                                                           0
26      0.41       0.41       0.38       0.32       0.20       0.02       0.22       0.24    8     .275     0.41

NO        12         12         12         12         12         12         12         12   96

MEAN   .1408      .1408      .1683      .1483      .1916      .1733      .1816       .205          .1687

MAX     0.41       0.41       0.42       0.39       0.45       0.40       0.42       0.42                    0.45
```

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Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                          AQDHS-II AIR QUALITY DATA REPORT                                                          PAGE    23
                                                              DISPLAY N>9997

AQCR:    169       AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE        COLLECTION METH:    INSTRUMENTAL                         YEAR:  1974
COUNTY: 0960       PROJECT:    EPISODE MONITORING                    ANALYSIS METHOD:    NONDISPERSIVE INFRA-RED              MONTH:  APRIL
AREA:    0001      PARAMETER: CARBON MONOXIDE                        SAMPLING INTERVAL: 04 HOURS                              MIN DET:    .575
SITE:    001       UNITS:      M-GMS/M3 (25DEG C,1013 M-BARS)        SARUAD KEY:          340001001A0616                      UNITS CODE: 05
YADKIN ROAD                                                          KEY-1: 341690960000100IA06474 KEY-2: 421011105 KEY-3: 040103
                                          PRIMARY                                                       SECONDARY
FEDERAL STANDARD  10,000 UG/M3 (0 C)    8 HR. MAX, 1 PER YR.                       10,000 UG/M3 (0 C)  8 HR. MAX, 1 PER YR.
STATE STANDARD    10,000 UG/M3 (25 C), 8 HR. MAX, 1 PER YR.                       10,000 UG/M3 (25 C) 8 HR. MAX, 1 PER YR.


                                HOUR

DAY      03        07        11        15        19        23     NO.     MEAN      MAX

01     0.001     0.001     0.002     0.003     0.005     0.008      6    .0033    0.008
02     0.001     0.001     0.002     0.003     0.005     0.008      6    .0033    0.008
03     0.002     0.002     0.004     0.006     0.010     0.016      6    .0066    0.016
04     0.003     0.003     0.006     0.009     0.015     0.024      6      .01    0.024
05                                                                  0
06                                                                  0
07                                                                  0
08     0.005     0.005     0.010     0.015     0.025     0.040      6    .0166    0.040
09                                                                  0
10     0.008     0.008     0.016     0.024     0.040     0.014      6    .0183    0.040
11                                                                  0
12                                                                  0
13                                                                  0
14                                                                  0
15                                                                  0
16                                                                  0
17                                                                  0
18     0.013     0.013     0.026     0.039     0.015     0.004      6    .0183    0.039
19     0.021     0.021     0.042     0.013     0.005     0.018      6      .02    0.042
20     0.033     0.033     0.018     0.002     0.020     0.022      6    .0213    0.033
21                                                                  0
22                                                                  0
23     0.004     0.004     0.010     0.015     0.025     0.040      6    .0163    0.040
24                                                                  0
25                                                                  0
26     0.037     0.037     0.028     0.017     0.045     0.012      6    .0293    0.045
27     0.041     0.041     0.038     0.032     0.020     0.002      6     .029    0.041

NO        12        12        12        12        12        12     72

MEAN    .014      .014     .0168     .0148     .0191     .0173           .0160

MAX    0.041     0.041     0.042     0.039     0.045     0.040                    0.045
```

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Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

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STATE:  NORTH CAROLINA (34)                      AQDHS-II AIR QUALITY DATA REPORT                                   PAGE    24
                                                           DISPLAY N>9997

AQCR:    169       AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE        COLLECTION METH:   GAS BUBBLER                 YEAR:  1974
COUNTY: 0960       PROJECT:    EPISODE MONITORING                    ANALYSIS METHOD:   PHENOLPHTHALEIN             MONTH:  MAY
AREA:   0001       PARAMETER:  CARBON DIOXIDE                        SAMPLING INTERVAL: 06 HOURS                    MIN DET:    1.8
SITE:    001       UNITS:      M-GMS/M3 (25DEG C,1013 M-BARS)        SAROAD KEY:        340001001A0616              UNITS CODE: 05
YADKIN ROAD                                                          KEY-1: 34169096000001001A06574 KEY-2: 421029105 KEY-3: 050104


                  HOUR

DAY     04       10       16       22     NO.    MEAN     MAX

01    .0001    .0001    .0002    .0003     4   .0001   .0003
02                                         0
03                                         0
04                                         0
05                                         0
06                                         0
07                                         0
08                                         0
09                                         0
10    .0001    .0001    .0002    .0003     4   .0001   .0003
11    .0002    .0002    .0004    .0006     4   .0003   .0006
12    .0003    .0003    .0006    .0009     4   .0005   .0009
13    .0005    .0005    .0010    .0015     4   .0008   .0015
14                                         0
15                                         0
16                                         0
17                                         0
18    .0008    .0008    .0016    .0024     4   .0014   .0024
19    .0013    .0013    .0026    .0039     4   .0022   .0039
20    .0021    .0021    .0042    .0013     4   .0024   .0042
21    .0033    .0033    .0018    .0002     4   .0021   .0033
22    .0004    .0004    .0010    .0015     4   .0006   .0015
23                                         0
24                                         0
25                                         0
26    .0037    .0037    .0028    .0017     4   .0029   .0037
27                                         0
28                                         0
29                                         0
30    .0041    .0041    .0038    .0032     4   .0038   .0041

NO       12       12       12       12    48

MEAN  .0014    .0014    .0016    .0014         .0014

MAX   .0041    .0041    .0042    .0039                  .0042
```

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Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

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STATE:  NORTH CAROLINA (34)                          AQDHS-II AIR QUALITY DATA REPORT                                    PAGE    25
                                                             DISPLAY N>9997

AQCR:    169      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE        COLLECTION METH:    DAVIS INSTRUMENT              YEAR:  1974
COUNTY: 0960      PROJECT:    EPISODE MONITORING                    ANALYSIS METHOD:    SEQUENTIAL-CONDUCTOMETRIC    MONTH:  JUNE
AREA:   0001      PARAMETER: SULFUR DIOXIDE                         SAMPLING INTERVAL: 08 HOURS                      MIN DET:   28.6
SITE:   001       UNITS:      U-GMS/M3 (0DEG C, 1013 M-BARS)        SAROAD KEY:         340001001A0616               UNITS CODE: 02
YADKIN ROAD                                                         KEY-1: 3416909600001001A06674 KEY-2: 424013302 KEY-3: 060105
                                              PRIMARY                                               SECONDARY
FEDERAL STANDARD      365 UG/M3 (25 C)  24 HOUR MAXIMUM, 1 PER YEAR          1300 UG/M3 (0 C), 3 HR. MAX.,1 PER YR
STATE STANDARD         60 UG/M3 (25 C)  ANNUAL ARITHMETIC MEAN               0.4 PARTS/MILLION,  3 HR.MAX, 1 PER YEAR


              HOUR

DAY     05        13        21     NO.    MEAN      MAX

01      0.1       0.1       0.2     3    .1333      0.2
02      0.1       0.1       0.2     3    .1333      0.2
03      0.2       0.2       0.4     3    .2666      0.4
04      0.3       0.3       0.6     3       .4      0.6
05      0.5       0.5       1.0     3    .6666      1.0
06      0.8       0.8       1.6     3    1.067      1.6
07      1.3       1.3       2.6     3    1.733      2.6
08      2.1       2.1       4.2     3      2.8      4.2
09                                  0
10                                  0
11                                  0
12                                  0
13                                  0
14                                  0
15                                  0
16                                  0
17                                  0
18                                  0
19                                  0
20                                  0
21                                  0
22                                  0
23                                  0
24      3.3       3.3       1.8     3      2.8      3.3
25                                  0
26      0.4       0.4       1.0     3       .6      1.0
27                                  0
28      3.7       3.7       2.8     3      3.4      3.7
29                                  0
30      4.1       4.1       3.8     3       4.      4.1


NO       12        12        12    36

MEAN  1.408     1.408     1.683          1.500

MAX     4.1       4.1       4.2                     4.2
```

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Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                AQDHS-II AIR QUALITY DATA REPORT                                          PAGE    26
                                                      DISPLAY N>9997

AQCR:   169     AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE        COLLECTION METH:    GAS BUBBLER                  YEAR:  1974
COUNTY: 0960    PROJECT:    EPISODE MONITORING                    ANALYSIS METHOD:    SALTZMAN(100ML TU+ORIFIC)    MONTH:  JULY
AREA:   0001    PARAMETER:  NITROGEN DIOXIDE                      SAMPLING INTERVAL:  12 HOURS                     MIN DET:  .0027
SITE:   001     UNITS:      PARTS PER MILLION (VOL/VOL)           SAROAD KEY:         340001001A0616               UNITS CODE: 07
YADKIN ROAD                                                       KEY-1: 341690960000100lA06774 KEY-2: 426028207 KEY-3: 070106
                                       PRIMARY                                            SECONDARY
FEDERAL STANDARD      0.05 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              0.05 PARTS/MILLION, ANNUAL ARITHMETIC MEAN
STATE STANDARD        0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN              0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN

          HOUR

DAY       06        18     NO.     MEAN      MAX

01       0.01      0.01     2      .01      0.01
02                          0
03       0.01      0.01     2      .01      0.01
04                          0
05       0.02      0.02     2      .02      0.02
06                          0
07       0.03      0.03     2      .03      0.03
08                          0
09                          0
10                          0
11                          0
12                          0
13                          0
14       0.05      0.05     2      .05      0.05
15                          0
16                          0
17                          0
18                          0
19                          0
20       0.08      0.08     2      .08      0.08
21                          0
22       0.13      0.13     2      .13      0.13
23                          0
24       0.21      0.21     2      .21      0.21
25                          0
26       0.33      0.33     2      .33      0.33
27                          0
28       0.04      0.04     2      .04      0.04
29                          0
30       0.37      0.37     2      .37      0.37
31       0.41      0.41     2      .41      0.41

NO        12        12     24

MEAN    .1408     .1408           .1408

MAX      0.41      0.41                     0.41
```

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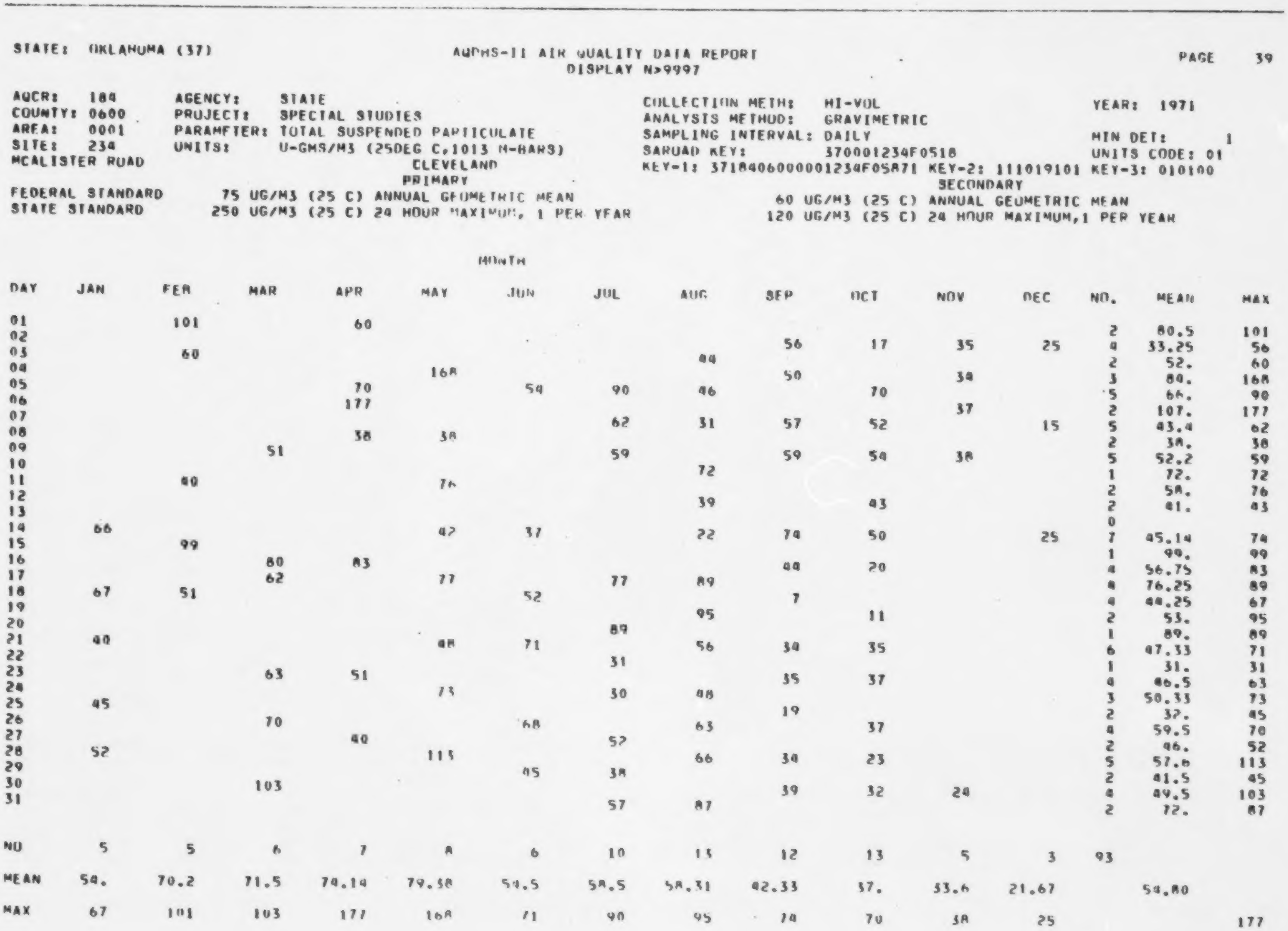
Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR



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STATE:  OKLAHOMA (37)                          AQDHS-II AIR QUALITY DATA REPORT                                     PAGE    39
                                                       DISPLAY N>9997

AQCR:    184     AGENCY:     STATE                                 COLLECTION METH:    HI-VOL                  YEAR:  1971
COUNTY:  0600    PROJECT:    SPECIAL STUDIES                       ANALYSIS METHOD:    GRAVIMETRIC
AREA:    0001    PARAMETER:  TOTAL SUSPENDED PARTICULATE           SAMPLING INTERVAL:  DAILY                   MIN DET:       1
SITE:    234     UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)        SAROAD KEY:         370001234F0518          UNITS CODE: 01
MCALISTER ROAD                           CLEVELAND                 KEY-1: 3718406000001234F05871 KEY-2: 111019101 KEY-3: 010100
                                          PRIMARY                                                SECONDARY
FEDERAL STANDARD      75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                     60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
STATE STANDARD       250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR              120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR

                                                   MONTH

DAY     JAN     FEB     MAR     APR     MAY     JUN     JUL     AUG     SEP     OCT     NOV     DEC   NO.    MEAN     MAX

01              101              60                                                                     2    80.5     101
02                                                                       56      17      35      25     4   33.25      56
03               60                                              44                                     2     52.      60
04                                     168                               50              34             3     84.     168
05                               70              54      90      46              70                     5     66.      90
06                              177                                                      37             2    107.     177
07                                                       62      31      57      52              15     5    43.4      62
08                               38      38                                                             2     38.      38
09                       51                              59              59      54      38             5    52.2      59
10                                                               72                                     1     72.      72
11               40                      76                                                             2     58.      76
12                                                               39              43                     2     41.      43
13                                                                                                      0
14       66                              42      37              22      74      50              25     7   45.14      74
15               99                                                                                     1     99.      99
16                       80      83                                      44      20                     4   56.75      83
17                       62              77              77      89                                     4   76.25      89
18       67      51                              52                       7                             4   44.25      67
19                                                               95              11                     2     53.      95
20                                                       89                                             1     89.      89
21       40                              48      71              56      34      35                     6   47.33      71
22                                                       31                                             1     31.      31
23                       63      51                                      35      37                     4    46.5      63
24                                       73              30      48                                     3   50.33      73
25       45                                                              19                             2     32.      45
26                       70                      68              63              37                     4    59.5      70
27                               40                      52                                             2     46.      52
28       52                             113                      66      34      23                     5    57.6     113
29                                               45      38                                             2    41.5      45
30                      103                                              39      32      24             4    49.5     103
31                                                       57      87                                     2     72.      87

NO        5       5       6       7       8       6      10      13      12      13       5       3    93

MEAN    54.    70.2    71.5   74.14   79.38    54.5    58.5   58.31   42.33     37.    33.6   21.67         54.80

MAX      67     101     103     177     168      71      90      95      74      70      38      25                   177
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Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  OKLAHOMA (37)                          AQDHS-II AIR QUALITY DATA REPORT                                    PAGE    59
                                                          DISPLAY N>9997

AQCR:    186      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:    INSTRUMENTAL                YEAR:  1965
COUNTY: 3020      PROJECT:    SPECIAL STUDIES                        ANALYSIS METHOD:    ELEC. / MACH. AVG. L2-L1
AREA:    3020     PARAMETER:  LAPSE RATE                             SAMPLING INTERVAL:  WEEKLY                      MIN DET:  -99.0
SITE:    996      UNITS:      DEG. CENTIGRADE/100 M                  SAROAD KEY:         373020996A051A              UNITS CODE: 2A
SPERRY MANUFACTURING, INC.                 TULSA                     KEY-1: 3718630203020996A05965 KEY-2: 61202212A KEY-3: 020200

                                                      MONTH

WEEK    JAN      FEB      MAR      APR      MAY      JUN      JUL      AUG      SEP      OCT      NOV      DEC     NO.   MEAN     MAX

01               .0500    5.00                                                                                    2    2.525    5.00
02                500                                                                                             1    500.     500
03               50.0                                                                                             1    50.     50.0
04               0.500                                                                                            1    .5      0.500
05               .0500                                                                                            1    .05     .0500

NO       0        5        1        0        0        0        0        0        0        0        0        0       6

MEAN             110.1     5.                                                                                          92.60

MAX               500     5.00                                                                                                  500
```

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Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                    AUDHS-II AIR QUALITY DATA REPORT                                              PAGE    33
                                                          DISPLAY N>9997

AQCR:    170      AGENCY:    EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:    GAS BUBBLER                  YEAR:  1973
COUNTY: 2980      PROJECT:   EPISODE MONITORING                     ANALYSIS METHOD:    SALTZMAN METHOD
AREA:    0001     PARAMETER: OXIDES OF NITROGEN                     SAMPLING INTERVAL: MONTHLY                       MIN DET:  .0027
SITE:    004      UNITS:     PARTS PER MILLION (VOL/VOL)            SAROAD KEY:          340001004A0617              UNITS CODE: 07
GUM BRANCH ROAD, ONSLOW COUNTY              JACKSONVILLE            KEY-1: 3417029800001004A06A73 KEY-2: 426039907 KEY-3: 010100

                                                    MONTH

SITE   JAN      FEB      MAR      APR      MAY      JUN      JUL      AUG      SEP      OCT      NOV      DEC     NO.   MEAN     MAX

004   .0026    .0025    .0999    .0023    .0022    .0021    .0999    .0023    .0024    .0025    .0026    .0025    12   .0186    .0999
```

(Page 12 of 18)

Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                  AQDHS-II AIR QUALITY DATA REPORT                                   PAGE    19
                                                          DISPLAY N>999/

AQCR:    166      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE        COLLECTION METH:    GAS BUBBLER                YEAR:  1972
COUNTY: 2120      PROJECT:    EPISODE MONITORING                    ANALYSIS METHOD:    PARAROSANILINE
AREA:    0001     PARAMETER: ALDEHYDE                                SAMPLING INTERVAL: QUARTERLY                  MIN DET:     5.5
SITE:    002      UNITS:      U-GMS/M3 (0DEG C, 1013 M-BARS)        SAROAD KEY:         340001002A0616             UNITS CODE: 02
HIGHWAY 301 BUS., JOHNSTON CO.            SMITHFIELD                KEY-1: 341662120000100 2A06B72 KEY-2: 435019202 KEY-3: 010100

                  QUARTER

SITE   1ST       2ND       3RD       4TH    NO.     MEAN     MAX

002    11.9      12.8      13.2      10.1     4      12.     13.2
```

(Page 13 of 18)

Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                  AQDHS-II AIR QUALITY DATA REPORT                                             PAGE     6
                                                        DISPLAY N>9997

AQCR:    136      AGENCY:    COUNTY                                   COLLECTION METH:   GAS BUBBLER                 YEAR:  1960
COUNTY: 1780      PROJECT:   COMPLAINT INVESTIGATION                  ANALYSIS METHOD:   CHROMATROPIC ACID
AREA:    0003     PARAMETER: FORMALDEHYDE                             SAMPLING INTERVAL: COMPOSITE                   MIN DET:      .5
SITE:    002      UNITS:     U-GMS/M3 (25DEG C,1013 M-BARS)           SAROAD KEY:        340003002G0413              UNITS CODE: 01
REIDSVILLE HIGHWAY                              GREENSBORO            KEY-1: 3413617800003002G04C60 KEY-2: 435029101 KEY-3: 590052

COMPOSITE TYPE:  ANNUAL

PD   RDING    SAMPLES  TIME-CODE

00     2.3     52        9

NO       1

MEAN   2.3

MAX    2.3
```

(Page 14 of 18)

Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                       AQDHS-II AIR QUALITY DATA REPORT                                                  PAGE      7
                                                               DISPLAY N>9997

AQCR:    136      AGENCY:     COUNTY                                    COLLECTION METH:   GAS BUBBLER                 YEAR:  1972
COUNTY: 1780      PROJECT:    COMPLAINT INVESTIGATION                   ANALYSIS METHOD:   CHROMATROPIC ACID
AREA:    0003     PARAMETER: FORMALDEHYDE                               SAMPLING INTERVAL: COMPOSITE                   MIN DET:      .5
SITE:    002      UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)            SAROAD KEY:        340003002G0413              UNITS CODE: 01
REIDSVILLE HIGHWAY                               GREENSBORO             KEY-1: 3413617800003002G04C72 KEY-2: 435029101 KEY-3: 180191

COMPOSITE TYPE:  QUARTERLY

PD    RDING     SAMPLES  TIME-CODE

01       3.4     91          8
02
03       3.9     91          8
04       4.4     91          8

NO         3

MEAN     3.9

MAX      4.4
```

(Page 15 of 18)

Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                           PAGE     9
                                                           DISPLAY N>9997

AQCR:    136      AGENCY:     COUNTY                                    COLLECTION METH:   GAS BUBBLER                 YEAR:  1973
COUNTY: 1780      PROJECT:    COMPLAINT INVESTIGATION                   ANALYSIS METHOD:   CHROMATROPIC ACID
AREA:    0003     PARAMETER:  FORMALDEHYDE                              SAMPLING INTERVAL: COMPOSITE                   MIN DET:      .5
SITE:    002      UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)            SAROAD KEY:        340003002G0413              UNITS CODE: 01
REIDSVILLE HIGHWAY                          GREENSBORO                  KEY-1: 3413617800003002G04C73 KEY-2: 435029101 KEY-3: 380122

COMPOSITE TYPE:  MONTHLY

PD    RDING    SAMPLES  TIME-CODE

01      2.9     22          8
02      4.0     42          8
03      1.9     30          8
04      0.9     30          8
05      2.8     30          8
06      3.7     30          8
07      1.5     30          8
08      0.2     30          8
09      1.7     30          8
10      1.9     30          8
11      3.6     22          8
12      0.5     42          8

NO       12

MEAN  2.133

MAX     4.0
```

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Figure AQT6-3 - continued. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                          PAGE    15
                                                          DISPLAY N>9997

AQCR:   136      AGENCY:     COUNTY                                        COLLECTION METH:    GAS BUBBLER               YEAR:  1973
COUNTY: 1780     PROJECT:    COMPLAINT INVESTIGATION                       ANALYSIS METHOD:    CHROMATROPIC ACID
AREA:   0003     PARAMETER:  FORMALDEHYDE                                  SAMPLING INTERVAL:  COMPOSITE                 MIN DET:      .5
SITE:   002      UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)                SAROAD KEY:         340003002G0413            UNITS CODE: 01
REIDSVILLE HIGHWAY                          GREENSBORO                     KEY-1: 3413617800003002604C73 KEY-2: 435029101 KEY-3: 480107

COMPOSITE TYPE:  WEEKLY

PD   RDING    SAMPLES  TIME-CODE

01    4.1       7         8
02    4.6       7         8
03    3.7       7         8
04    3.3       7         8
05    2.0       7         8
06    0.3       7         8
07    2.3       7         8
08    2.6       7         8
09    4.9       7         8
10    2.5       7         8
11
12
13
14
15
16
17
18
19    4.9       9         8
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35    4.9       6         8
36
37
38
```

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Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                                     PAGE    16
                                                          DISPLAY N>9997

AQCR:    136      AGENCY:    COUNTY                                  COLLECTION METH:   GAS BUBBLER                 YEAR:  1973
COUNTY: 1780      PROJECT:   COMPLAINT INVESTIGATION                 ANALYSIS METHOD:   CHROMATROPIC ACID
AREA:   0003      PARAMETER: FORMALDEHYDE                            SAMPLING INTERVAL: COMPOSITE                   MIN DET:      .5
SITE:   002       UNITS:     U-GMS/M3 (25DEG C,1013 M-BARS)          SAROAD KEY:        340003002G0413              UNITS CODE: 01
REIDSVILLE HIGHWAY                             GREENSBORO            KEY-1: 3413617800003002G04C73 KEY-2: 435029101 KEY-3: 480107

COMPOSITE TYPE:  WEEKLY

PD   RDING    SAMPLES  TIME-CODE

39
40
41
42
43
44
45
46
47
48
49
50
51      4.9     11        8

NO       13

MEAN  3.462

MAX     4.9
```

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Figure AQT6-3 - continued.  Procedure AQRPM20 -- program ARPMSTR

## AQDHS-II TEST 7

## Produce a Master File Summary Report

In this test run, a summary report of the AQDHS-II master file is generated using the cataloged procedure AQRPM30 which executes ARPMSBR (AQ0300), the master file summary report program.

ARPMSBR (AQ0300) compacts the data from an input AQDHS-II master file into a report consisting of one line of information for all the records in each site-parameter combination for one year. Each line in the listing describes the particular data group in terms of the number, the range, and the average values of its readings.

The run stream for this test run contains the JCL necessary for producing the master file summary report. This run stream is shown in Figure AQT7-1.

The cataloged procedure executed by this run stream is AQRPM30. A substitutable parameter is used to specify AQMST01N as the input AQDHS-II master file. Refer to Figure AQT7-2 for the sample output produced by this procedure.

```
//AQSTST07  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//*
//* GENERATE A SUMMARY REPORT FOR AQMST01N
//*
//TEST7A EXEC AQRPM30,
//             MSTRFIL=AQMST01N
//*
//* BRIEFLY LIST THE CONTENTS OF AQMST01N
//*
```

Figure AQT7-1. Run Stream

```
                     AQDHS-II MASTER FILE SUMMARY REPORT PROGRAM  -  DIAGNOSTIC REPORT                        PAGE    1


PROGRAM NAME: ARPMSBR (AQ0300)
REVISION LEVEL: 2-00
LAST UPDATE #:  27
DATE INCORPORATED: MAY 1, 1980
```

(Page 1 of 3)

Figure AQT7-2. Procedure AQRPM30 -- program ARPMSBR

```
                                    AIR QUALITY DATA REPORT  -  TOTALS BY YEAR FOR EACH SITE-PARAMETER GROUP              PAGE     1

       SITE-KEY          YEAR   PARM-KEY     NBR OF    NBR OF            MIN           MAX          2ND          3RD          MEAN
                                              RDGS   NON-NULL RDGS                                  MAX          MAX

  1004910800001001F021    71   424011107     720       720           0.0000        2.4800       2.4800       2.0100       0.15264

  1206001400001003C011    73   611025014      24        24           2.0000        6.0000       5.0000       5.0000       3.33333

  2010800450001004B038    70   621012215      37         3          -1.2000       -0.5000      -1.1000      -1.2000      -0.93333

  3413617800003002G04C    60   435029101       1         1           2.3000        2.3000   **********   **********       2.30000
                          72   435029101       7         7           0.7000        4.6000       4.4000       3.9000       2.84286
                          73   435029101      29        29           0.2000        4.9000       4.9000       4.9000       3.02414
                          73   612023128       1         1          -1.3000       -1.3000   **********   **********      -1.30000

  3416421200001002A06A    73   426039907      10         1           0.0094        0.0094   **********   **********       0.00940

  3416621200001002A06B    72   435019202       4         4          10.1000       13.2000      12.8000      11.9000      12.00000
                          72   621032217       2         1          -1.0000       -1.0000   **********   **********      -1.00000

  3416909600001001A062    74   112018109      48        48           0.1000        4.5000       4.2000       4.2000       1.64583

  3416909600001001A063    74   211017190      96        96           0.0100        0.4500       0.4200       0.4200       0.16875

  3416909600001001A064    74   421011105      72        72           0.0010        0.0450       0.0420       0.0410       0.01606

  3416909600001001A065    74   421029105      48        48           0.0001        0.0042       0.0041       0.0041       0.00150

  3416909600001001A066    74   424013302      36        36           0.1000        4.2000       4.1000       4.1000       1.50000

  3416909600001001A067    74   426028207      24        24           0.0100        0.4100       0.4100       0.3700       0.14083

  3417028800002001D051    76   424011407     168       155           0.0000     5840.0000       1.2000       0.8550      37.73848

  3417029800001004A06A    73   426039907      12        12           0.0021        0.0999       0.0999       0.0026       0.01865

  3417029800001004A068    76   111019101      79        14           6.0000      124.0000      81.0000      71.0000      53.14286
                          76   424019101      29         5           0.0000       28.0000       0.0000       0.0000       5.60000
                          77   111019101      44        28           0.0000      964.0000     455.0000     455.0000     400.64286

  3417104800001003A06H    76   424019101     112        19           0.0000     1500.0000      21.6000       3.8000      80.73158
                          77   424019101      81        16           0.0000     9450.0000    1500.0000     361.3000     711.01250

  3718406000001234F058    71   111019101     326        93           7.0000      177.0000     168.0000     113.0000      54.79570

  3718630202260995A051    77   633011118    1392      1379           0.0000        1.4400       1.4300       1.4200       0.28236

  3718630203000997A05C    75   431021107       1         1           0.0400        0.0400   **********   **********       0.04000

  3718630203000997A051    74   431021107     168       168           0.0000        6.0000       5.0000       5.0000       1.71589
                          77   612022128      12        12          -1.0100        1.1700       0.9000       0.7900       0.25417

  3718630203000997A052    63   621012015      60        60           0.9000     9902.0000    9901.0000    9900.0000    2116.70106
```

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Figure AQT7-2 - continued.  Procedure AQRPM30 -- program ARPMSBR

```
                                    ARPMSBR (AQ0300) SUMMARY MESSAGES                                              PAGE    1



INPUT RECORD COUNT                          334
OUTPUT LINE COUNT:                           84
TOTAL NUMBER OF READINGS:                 5,028
TOTAL NUMBER OF NON-NULL READINGS:        4,435
NON-NULL READINGS PERCENTAGE:               88%



PROGRAM NAME: ARPMSBR (AQ0300)
REVISION LEVEL: 2-00
LAST UPDATE #:  27
DATE INCORPORATED: MAY 1, 1980
```

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Figure AQT7-2 - continued. Procedure AQRPM30 -- program ARPMSBR

## AQDHS-II TEST 8

### Produce an Inventory of the Master File by Pollutant

In this test run, an inventory by pollutant report is generated for an AQDHS-II master file using the cataloged procedure AQRPM40. This procedure executes ASRMSTR (AQ0140), the master file sort program, and ARPINVP (AQ0290), the inventory by pollutant report program.

ASRMSTR (AQ0140) can sort an AQDHS-II master file into the various sequences required by the AQDHS-II report programs.

These sorting sequences are determined by the options specified on the option card. The BATCH option is used when sorting batched retrieval answer files. The PARM option sorts the master file by the parameter code, whereas, the SITE and STAT options sort the master file by the site code. And, the STND option sorts the file into the standard master file sequence.

Beginning in card column 1, the word BATCH can be entered which would sort a file created by the retrieval package using the BATCH option. To specify either the PARM, SITE, STAT or STND option, the option word desired must begin in card column 7 of the option card. The remaining card columns must contain blanks. The PARM, SITE, STAT or STND option can be used in conjunction with the BATCH option or without it. The default value of STND will be used to control the sorting sequence when an option card is not present in the run stream.

ARPINVP (AQ0290) is a report program designed to describe the contents of an AQDHS-II master file primarily by pollutant-related fields and secondarily by site-related fields. The input master file must be sorted by ASRMSTR (AQ0140) using the PARM option. The parameter and site files are used to supply the parameter and the site descriptions for the report. The report generated by this program produces a one-line summary for each group of records which have the same pollutant-related fields, site-related fields, year, and time code.

The run stream for this test run contains the JCL necessary for producing an inventory of the master file by pollutant. This run stream is shown in Figure AQT8-1.

The cataloged procedure executed by this run stream is AQRPM40. Through the use of substitutable parameters, the input master file is specified as AQMST01N (created and stored on disk in Test 5), the input parameter file is specified as AQPARM01, (created and stored on disk in Test 1), and the input site file is specified as AQSITE01, (created and stored on disk in Test 2). The user must supply the DD (data definition) information for the option card file. Also, the option specified in the SORT step must be PARM. Refer to Figure AQT8-2 for the sample output produced by this procedure.

```
//AQSTST08  JOB  RTI.C44.P02443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.P02069.MCMASTER.DPR.JCL
//*
//* PRODUCE AN INVENTORY BY POLLUTANT OF AQMST01N
//*
//TEST8A EXEC AQRPM40,
//              MSTRFIL=AQMST01N,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSITE01
//*
//* RESORT THE MASTER FILE AND
//* GENERATE THE POLLUTANT INVENTORY
//*
//SORT.OPTION DD *
      PARM
/*
```

Figure AQT8-1. Run Stream

```
                         AUDHS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE    1

PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 28
DATE INCORPORATED: OCTOBER 31, 1978

SORT OPTION SPECIFIED:       PARM


NUMBER OF INPUT RECORDS READ:           338
NUMBER OF MASTER RECORDS WRITTEN:       338
NUMBER OF DIAGNOSTIC MESSAGES:            0
```

(page 1 of 3)

Figure AQT8-2. Procedure AQRPM40 -- program ASRMSTR

```
                                 AIR QUALITY DATA REPORT - INVENTORY BY POLLUTANT                                       PAGE    1

--------------------------------------------------------------------------------------------------------------------------------
PUL-MTH        POLLUTANT            STATE-AGCR-CNTY- AG-            SITE               YEAR TIME UNIT   NUM    MIN     MAX   ARITH
 CODE            NAME               AREA-SITE CODES  PRJ           ADDRESS                  CODE CODE   OBS    OBS     OBS    MEAN
--------------------------------------------------------------------------------------------------------------------------------

1110191  TOTAL SUSPENDED PARTICULATE  341702980000l004 A06  GUM BRANCH ROAD, ONSLOW COUN 1976   8   01     14  6.000   124.0  53.142
                                                                                        1977   8   01     28  .0000   464.0  400.64
                                      371840600000l230 F05        MCALISTER ROAD        1971   8   01     93  7.000   177.0  54.795

1120181   SOILING INDEX (COH/1000LF)  3416909600001001 A06         YADKIN ROAD          1974   2   09     48  .1000   4.500  1.6458

2110171   TOTAL SETTLED PARTICULATE   3416909600001001 A06         YADKIN ROAD          1974   3   90     96  .0100   .4500  .16875

4210111        CARBON MONOXIDE        3416909600001001 A06         YADKIN ROAD          1974   4   05     72  .0010   .0450  .01605

4210291        CARBON DIOXIDE         3416909600001001 A06         YADKIN ROAD          1974   5   05     48  .0001   .0042  .00149

4240111        SULFUR DIOXIDE         1004910800001001 F02      NORTH 10TH AVENUE       1971   1   07    720  .0000   2.480  .15263

4240114        SULFUR DIOXIDE         3417028800002001 D05  WRIGHTSVILLE BEACH, NEW HANO 1976   1   07    155  .0000   5840.  37.738

4240133        SULFUR DIOXIDE         3416909600001001 A06         YADKIN ROAD          1974   6   02     36  .1000   4.200  1.5000

4240191        SULFUR DIOXIDE         3417029800001004 A06  GUM BRANCH ROAD, ONSLOW COUN 1976   8   01      5  .0000   28.00  5.6000
                                      3417104800001003 A06  BILTMORE ESTATES, ASHEVILLE, 1976   8   01     19  .0000   1500.  80.731
                                                                                        1977   8   01     16  .0000   4450.  711.01

4260282       NITROGEN DIOXIDE        3416909600001001 A06         YADKIN ROAD          1974   7   07     24  .0100   .4100  .14083

4260399      OXIDES OF NITROGEN       3416621200001002 A06  HIGHWAY 301 BUS., JOHNSTON C 1973   A   07      1  .0094   .0094  .00940
                                      3417029800001004 A06  GUM BRANCH ROAD, ONSLOW COUN 1973   A   07     12  .0021   .0999  .01865

4310211   NONMETHANE HYDROCARBONS     3718630203000997 A05     TULSA PUBLIC HEALTH      1975   C   07      1  .0400   .0400  .04000
                                                                                        1974   1   07    168  .0000   6.000  1.7158
                                                                                        1977   2   07      1  .9800   .9800  .98000

4350192           ALDEHYDE            3416621200001002 A06  HIGHWAY 301 BUS., JOHNSTON C 1972   H   02      4  10.10   13.20  12.000

4350291         FORMALDEHYDE          3413617800003002 G04     REIDSVILLE HIGHWAY       1960   C   01      1  2.300   2.300  2.3000
                                                                                        1972   C   01      7  .7000   4.600  2.8028
                                                                                        1973   C   01     29  .2000   4.900  3.0241

6110250        WIND DIRECTION         1206001400001003 C01  WAIKIKI, HONOLULU, HONOLULU 1973   1   14     24  2.000   6.000  3.3333

6120221          LAPSE RATE           3718630203000997 A05     TULSA PUBLIC HEALTH      1977   1   28     12 -1.010   1.170  .25416
                                                                                        1963   8   28      2  .9555   922.2  461.57
                                      3718630203000998 A05      TULSA POST OFFICE       1965   8   28      4  111.1   112.4  112.02
                                                                                        1965   8   28     18  .0020   57.00  6.1751
                                                                                               9   28      6  .0023   23.00  4.2596
                                      3718630203020996 A05  SPERRY MANUFACTURING, INC.  1963   H   28      4  51.00   51.10  51.025
```

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Figure AQT8-2 - continued. Procedure AQRPM40 -- program ARPINVP

```
                                INVENTORY BY POLLUTANT PROGRAM - DIAGNOSTIC REPORT                                PAGE    1

PROGRAM NAME: ARPINVP (AQ0290)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

NUMBER OF INPUT RECORDS:         334
NUMBER OF REPORT PAGES:            2
NUMBER OF ABORT MESSAGES:          0
```

(page 3 of 3)

Figure AQT8-2 - continued. Procedure AQRPM40 -- program ARPINVP

## AQDHS-II TEST 9

### Produce an Inventory of the Master File by Site

In this test run, an inventory by site report is generated for an AQDHS-II master file using the cataloged procedure AQRPM35. This procedure executes ASRMSTR (AQ0140), the master file sort program; and ARPINVS (AQ0280), the inventory by site report program.

ASRMSTR (AQ00140) was used in Test 8 to sort the master file using the PARM option. In this test run, however, the SITE option must be used to sort the master file. Refer to Test 8 for a description of ASRMSTR (AQ0140).

ARPINVS (AQ0280) is a report program designed to describe the contents of an AQDHS-II master file primarily by site-related fields and secondarily by pollutant-related fields. The input master file must be sorted by ASRMSTR (AQ0140) using the SITE option. The parameter and site files are used to supply the parameter and site descriptions for the report. The report generated by this program produces a one-line summary for each group of records which have the same site-related fields, pollutant-related fields, year, and time code.

The run stream for this test run contains the JCL necessary for producing an inventory of the master file by site. This run stream is shown in Figure AQT9-1.

The cataloged procedure executed by the run stream is AQRPM35. Through the use of substitutable parameters, the input master file is specified as AQMST01N (created and stored on disk in Test 5), the input parameter file is specifed as AQPARM01 (created and stored on disk in Test 1), and the input site file is specified as AQSITE01 (created and stored on disk in Test 2). The user must supply the DD (data definition) information for the option card file. Also, the option specified in the SORT step must be SITE. Refer to Figure AQT9-2 for the sample output produced by this procedure.

```
//AQSTST09  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//*
//* PRODUCE AN INVENTORY BY SITE OF AQMST01N
//*
//TEST9A EXEC AQRPM35,
//              MSTRFIL=AQMST01N,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSITE01
//*
//* RESORT THE SITE FILE AND
//* GENERATE THE SITE INVENTORY
//*
//SORT.OPTION DD *
     SITE
/*
```

Figure AQT9-1. Run Stream

```
                    AQDHS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     1

PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

SORT OPTION SPECIFIED:       SITE


NUMBER OF INPUT RECORDS READ:           334
NUMBER OF MASTER RECORDS WRITTEN:       334
NUMBER OF DIAGNOSTIC MESSAGES:            0
```

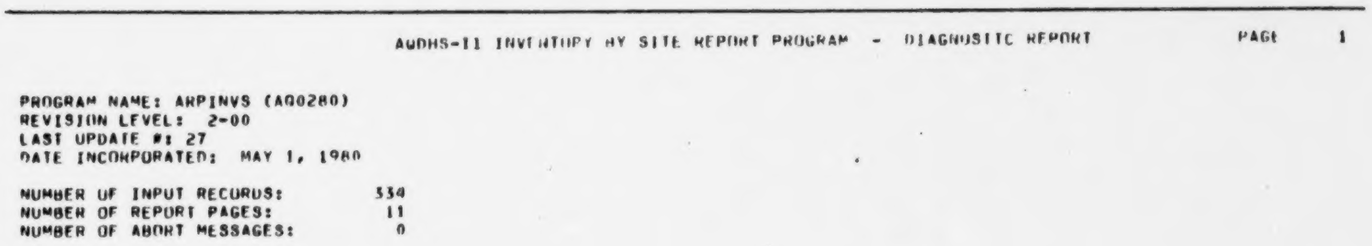
(page 1 of 3)

Figure AQT9-2. Procedure AQRPM35 -- program ASRMSTR

```
                              AIR QUALITY DATA REPORT  -  INVENTORY BY SITE                             PAGE    11

STATE:    37     AQCR:   186     COUNTY:    3020
------------------------------------------------------------------------------------------------------------------------------
 AREA    AGENCY             SITE                             POLLUTANT                POL-MTH  UN TM  YEAR   NUM      MIN        MAX      ARITH
 SITE     PROJ             ADDRESS                              NAME                    CODE   CD CD          OBS      OBS        OBS       MEAN
------------------------------------------------------------------------------------------------------------------------------


2260995  A05 SKIATOOK LAKE                   SOLAR RADIATION                    6330111  18  1  1977  1379    0.0000     1.4400     0.2823

3000997  A05 TULSA PUBLIC HEALTH             NONMETHANE HYDROCARBONS            4310211  07  C  1975     1    0.0400     0.0400     0.0400
                                                                                             1  1974   168    0.0000     6.0000     1.7158
                                                                                             2  1977     1    0.9800     0.9800     0.9800
                                             LAPSE RATE                         6120221  28  1  1977    12   -1.0100     1.1700     0.2581
                                                                                             8  1963     2    0.9555   922.2000   461.5777
                                             TEMPERATURE                        6210120  15  2  1963    60    0.9000  9902.0000  2116.7010
                                                                                             8  1963     2   93.3300  9666.0000  4879.6650
                                             DEW POINT                          6210320  15  8  1963     2    9.4440  9111.0000  4560.2220

3000998  A05 TULSA POST OFFICE               LAPSE RATE                         6120221  28  H  1963     4  111.1000   112.4000   112.0250
                                                                                             8  1965    18    0.0020    57.0000     6.1731
                                                                                             9  1965     6    0.0023    23.0000     4.2596

3020996  A05 SPERRY MANUFACTURING, INC.      LAPSE RATE                         6120221  28  H  1963     4   51.0000    51.1000    51.0250
                                                                                             8  1965    18    0.0027   500.0000    41.7980
                                                                                             9  1965     6    0.0500   500.0000    92.6000

3140992  A05 OCHELATA, TULSA, TULSA CO.      LAPSE RATE                         6120221  28  H  1963     4   -2.0000     0.0000    -1.0000
                                                                                             8  1965    18  -56.0000    -0.0008    -4.6922
                                                                                             9  1965     5  -56.0000    -0.0056   -12.3334

3140994  A05 VERA POST OFFICE                LAPSE RATE                         6120221  28  H  1963     4   -1.8000    -1.7000    -1.7750
                                                                                             8  1965    18  -50.0000    -0.0009    -6.4815
                                                                                             9  1965     6   -9.0000    -0.0009    -1.6634
                                             SOLAR RADIATION                    6330111  18  1  1977  1240    0.0000     1.3300     0.2762
```

(page 2 of 3)

Figure AQT9-2 - continued.  Procedure AQRPM35 -- program ARPINVS



```
                              AQDHS-II INVENTORY BY SITE REPORT PROGRAM  -  DIAGNOSITC REPORT            PAGE      1

PROGRAM NAME: ARPINVS (AQ0280)
REVISION LEVEL:  2-00
LAST UPDATE #: 27
DATE INCORPORATED:  MAY 1, 1980

NUMBER OF INPUT RECORDS:        334
NUMBER OF REPORT PAGES:          11
NUMBER OF ABORT MESSAGES:         0
```

(page 3 of 3)

Figure AQT9-2 - continued. Procedure AQRPM35 -- program ARPINVS

## AQDHS-II TEST 10

## Generate a Statistical Analysis Report from the Master File

In this test run, the AQDHS-II master file is sorted using the cataloged procedure AQSRM10 which executes ASRMSTR (AQ0140), the master file sort program. The cataloged procedure AQRPM10 is then used to perform a statistical analysis of the master file by executing ASTPRLM (AQ0190), the preliminary statistics program; ASTMSST (AQ0200), the statistical analysis program; and ARPMSST (AQ0270), the statistical report program.

Before a statistical analysis report can be produced, the input master file must be sorted by ASRMSTR (AQ0140) using the STAT option if the file contains data from more than one calendar year. Otherwise, the master file does not require sorting. ASRMSTR (AQ0140) was used in Test 8 to sort the master file using the PARM option. In this test run, however, the STAT option must be used to sort the master file. Refer to Test 8 for a description of ASRMSTR (AQ0140).

ASTPRLM (AQ0190) performs several statistical computations using the sorted master file and the parameter file as input. The results of these computations are passed to ASTMSST (AQ0200) via the preliminary statistics file. The readings from the input master file are passed to ASTMSST (AQ0200) via the raw data file. Both of these files are FORTRAN-compatible files.

The options in ASTPRLM (AQ0190) are used to specify whether the statistical analysis is done by month, quarter, year or for the total time period. When the TOTAL option is specified on the option card, the data are grouped by site key and parameter key. The statistical analysis is perfomed based on all the readings reported for each site and parameter key combination. If the MONTH, QUARTER, or YEAR option is specified, the data are further grouped by month, quarter, or year, respectively. Also, the statistical analysis is performed based on all the readings reported for a site and parameter key combination during each month, quarter, or year.

The option specified must begin in card column 1 of the option card. This option affects not only ASTPRLM (AQ0190), but also ASTMSST (AQ0200) and ARPMSST (AQ0270). The TOTAL option is the default value when the option card is blank or when there is no option card in the run stream. If an invalid option is used, the execution of ASTPRLM (AQ0190) will be aborted.

ASTMSST (AQ0200) performs a statistical analysis using the two files created by ASTPRLM (AQ0190), the preliminary statistics file and the raw data file. The statistics computed by ASTPRLM (AQ0190) and ASTMSST (AQ0200) are passed to ARPMSST (AQ0270) in a temporary file refered to as the statistics file. ASTMSST (AQ0200) is coded in ANS FORTRAN. Notice that the option specified for ASTPRLM (AQ0190) is also in effect for this program.

ARPMSST (AQ0270) prints the statistical analysis report which contains the results of the statistical analysis performed by ASTPRLM (AQ0190) and ASTMSST (AQ0200).

The primary input file to ARPMSST (AQ0270) is the temporary statistics file. The sorted site and parameter files are also required as input since prose descriptions of the sites and parameters are included in the output report.

The option specified for ASTPRLM (AQ0190) is also in effect in this program, however, additional options are used to specify the maximum number of lines to be printed per report page and whether or not a full page break will occur between one site and the next in the report. In order to have a full page break, the word FULL must begin in card column 1 of the option card. If the word BRIEF begins in card column 1, only a brief break between sites will occur. The maximum number of lines to be printed per report page can be specified by entering a two-digit numeric value beginning in card column 7. The default values of FULL and 64 will be used to control printing when the options specified are invalid or when an option card is not present in the run stream.

The statistical analysis report contains the statistics for each time period (either month, quarter, year, or total time period, depending on the option specified in ASTPRLM (AQ0190)) within a given site and parameter key combination on one line. The statistics listed for each group of data are provided below:

Percent of possible observations (readings) recorded for the time period;
Number of observations;
10th, 30th, 50th, 70th, 90th, 95th, and 99th percentiles;
Arithmetic mean;
Arithmetic standard deviation;
Geometric mean;
Geometric standard deviation;
Maximum reading;
Second maximum reading;
Third maximum reading;
Minimum reading; and
Minimum detectable value.

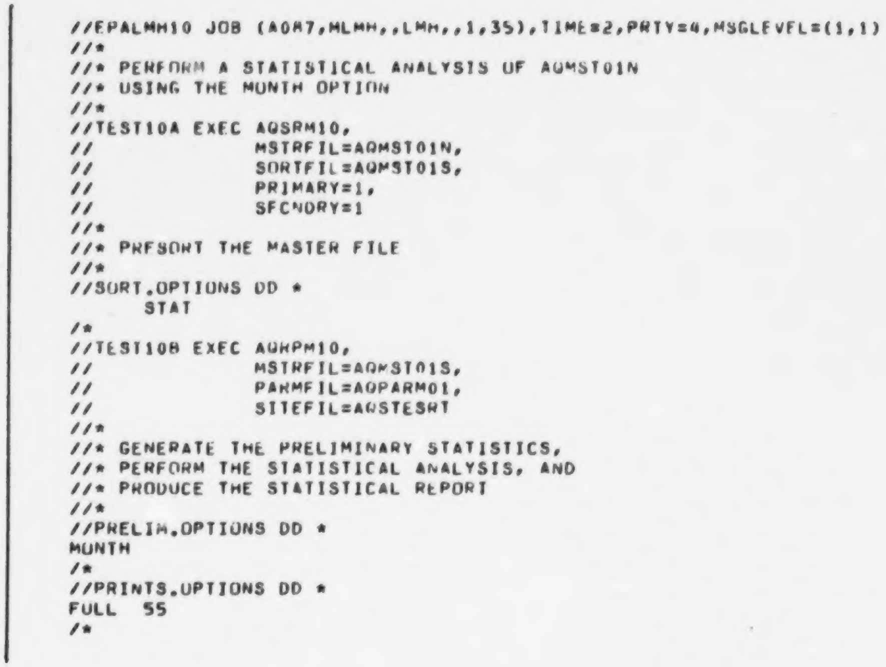
The format of the statistical analysis report depends on whether the MONTH, QUARTER, YEAR, or TOTAL option is specified for ASTPRLM (AQ0190). The output from this test run shows the report when the MONTH option is in effect. The reports resulting from the QUARTER, YEAR, or TOTAL option are shown in Ad Hoc Tests 6, 8, and 12, respectively.

The run stream for this test run contains the JCL necessary for obtaining a statistical analysis of the master file. This run stream is shown in Figure AQT10-1.

First, the run stream executes the cataloged procedure AQSRM10. Substitutable parameters are used to specify AQMST01N as the input master file (created and stored in Test 5) and AQMST01S as the sorted master file. The user must supply the DD (data definition) information for the option card file. The option specified in the SORT step of this test run is the STAT option. Refer to Figure AQT10-2 for the sample output produced by this procedure.

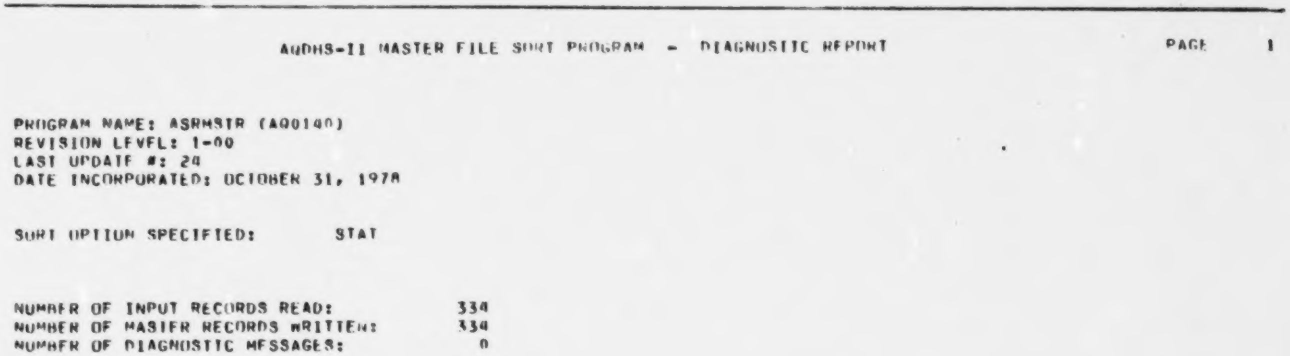
Next, the run stream executes the cataloged procedure AQRPM10. Through the use of substitutable parameters, the input master file is specified as AQMST01S (sorted in the first procedure of this run stream), the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), and the input sorted site file is specified as AQSTESRT (created and stored on disk in Test 6). The user must supply the DD information for the option card file in both the PRELIM and the PRINTS steps. The statistical analysis option specified in the PRELIM step of this test run is MONTH and the report options specified in the PRINTS step are FULL and 55. Figure AQT10-3 shows the sample output produced by this procedure.

It should be noted that the cataloged procedure AQSRM10 will create the sorted master file with a disposition of 'NEW,PASS', causing this file to be passed to the subsequent job steps but also causing the sorted master file to be deleted at the conclusion of the job.



```
//EPALMM10 JOB (AQ87,MLMM,,LMM,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* PERFORM A STATISTICAL ANALYSIS OF AQMST01N
//* USING THE MONTH OPTION
//*
//TEST10A EXEC AQSRM10,
//             MSTRFIL=AQMST01N,
//             SORTFIL=AQMST01S,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* PRESORT THE MASTER FILE
//*
//SORT.OPTIONS DD *
      STAT
/*
//TEST10B EXEC AQRPM10,
//             MSTRFIL=AQMST01S,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSTESRT
//*
//* GENERATE THE PRELIMINARY STATISTICS,
//* PERFORM THE STATISTICAL ANALYSIS, AND
//* PRODUCE THE STATISTICAL REPORT
//*
//PRELIM.OPTIONS DD *
MONTH
/*
//PRINTS.OPTIONS DD *
FULL  55
/*
```

Figure AQT10-1. Run Stream



```
                    AQDHS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                  PAGE    1

PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

SORT OPTION SPECIFIED:       STAT


NUMBER OF INPUT RECORDS READ:           334
NUMBER OF MASTER RECORDS WRITTEN:       334
NUMBER OF DIAGNOSTIC MESSAGES:            0
```

Figure AQT10-2. Procedure AQSRM10 -- program ASRMSTR

```
                         AQDHS-II PRELIMINARY STATISTICS PROGRAM  -  DIAGNOSTIC REPORT                          PAGE     1


PROGRAM NAME: ASTPRLM (AQ0190)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: MONTH

*** ASTPRLM 007 CONDITIONAL -        6 MASTER FILE RECORDS WITH QUARTERLY DATA WERE BYPASSED


NUMBER OF MASTER FILE RECORDS READ:                          338
NUMBER OF MASTER FILE RECORDS WITH COMPOSITE DATA:            39
NUMBER OF PARAMETER FILE RECORDS READ:                        89
NUMBER OF STATISTICS RAW DATA FILE RECORDS WRITTEN:          631
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS WRITTEN:        77
NUMBER OF DIAGNOSTIC MESSAGES:                                 1



------------------------------------------------------------------------------------------------------------




                         AQDHS-II STATISTICAL ANALYSIS PROGRAM  -  DIAGNOSTIC REPORT                           PAGE 1
PROGRAM NAME: ASTMSST (AQ0200)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980



NUMBER OF STATISTICS RAW DATA FILE RECORDS READ:       631
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS READ:     77
NUMBER OF STATISTICS FILE RECORDS WRITTEN:             225
```

(page 1 of 4)

Figure AQT10-3 - continued. Procedure AQRPM10 -- programs ASTPRLM and ASTMSST

```
                    AQDHS-II STATISTICAL ANALYSIS REPORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE      1

PROGRAM-NAME: ARPMSST (AQ0270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

PRINTING OPTIONS CHOSEN ARE FULL  SITE BREAK AND 55 LINES PER PAGE
```

(page 2 of 4)

Figure AQT10-3 - continued. Procedure AQRPM10 -- program ARPMSST

```
                                        AQDHS-II STATISTICAL ANALYSIS REPORT                                   PAGE    11
                                                ANALYSIS BY MONTH
                                               STATE (37): OKLAHOMA

SITE CODE: 37-3000-997-A-05      AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 3020
AGENCY/PROJECT: A05       SITE ADDRESS: TULSA PUBLIC HEALTH                              CITY: TULSA

-----------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                        METHOD OF COLLECTION AND ANALYSIS                     INTERVAL    UNITS                          TIMES
POLLUTANT-METHOD-INTERVAL-UNITS CODE                                                                                               HALF
       PCT   NBR   MIN    MIN                   PERCENTILES                      MAX     2ND     3RD    ARIT   ARIT    GEOM   GEOM   M DFI
YR/MON OBS   OBS  DETEC   OBS     10    30    50    70    90    95    99     OBS     MAX     MAX    MEAN   ST DEV  MEAN   ST DEV  SUB
-----------------------------------------------------------------------------------------------------------------------------
NONMETHANE HYDROCARBONS               INSTRUMENTAL               - FLAME IONIZATION          HOURLY      PARTS PER MILLION
43102-11-1-07
74/08  22.6   168  0.200 0.0       0.4   0.8   1.0   2.0   4.0   4.5   5.0  6.000  5.000  5.000   1.719  1.378   1.190  2.563      7

NONMETHANE HYDROCARBONS               INSTRUMENTAL               - FLAME IONIZATION          2 HOURS     PARTS PER MILLION
43102-11-2-07
77/08   0.3     1  0.200 0.980   0.98  0.98  0.98  0.98  0.98  0.98  0.98  0.980    N/A    N/A   0.980  0.0     0.980  1.000      0

LAPSE RATE                            INSTRUMENTAL               - ELEC. / MACH. AVG. L2-L1  HOURLY      DEG. CENTIGRADE/100 M
61202-21-1-28
77/08   1.6    12  -99.0 -1.01  -0.83 -0.43  0.61  0.71  0.90  1.17  1.17  1.170  0.900  0.790   0.254  0.740     N/A    N/A      0

LAPSE RATE                            INSTRUMENTAL               - ELEC. / MACH. AVG. L2-L1  DAILY       DEG. CENTIGRADE/100 M
61202-21-8-28
63/02   7.1     2  -99.0 0.955  0.955 0.955 0.955 922.2 922.2 922.2 922.2  922.2  0.955    N/A   461.5  651.4   29.68  128.9      0

TEMPERATURE                           INSTRUMENTAL               - SPOT READING              2 HOURS     DEGREES FAHRENHEIT
62101-20-2-15
63/01  16.1    60  -999. 0.900   0.90  9.90 95.42 949.6 9499. 9800. 9902.  9902.  9901.  9900.   2116.  3755.   95.19  26.68      0

TEMPERATURE                           INSTRUMENTAL               - SPOT READING              DAILY       DEGREES FAHRENHEIT
62101-20-8-15
63/02   7.1     2  -999. 93.33   93.3  93.3  93.3 9666. 9666. 9666. 9666.  9666.  93.33    N/A   4879.  6768.   949.8  26.60      0

DEW POINT                             INSTRUMENTAL               - SPOT READING              DAILY       DEGREES FAHRENHEIT
62103-20-8-15
63/02   7.1     2  -999. 9.444   9.44  9.44  9.44 9111. 9111. 9111. 9111.  9111.  9.444    N/A   4560.  6435.   293.3  128.9      0
```

(page 3 of 4)

Figure AQT10-3 - continued. Procedure AQRPM10 -- program ARPMSST

```
                                                    ARPMSST (A00270) SUMMARY MESSAGES                                          PAGE     1

NUMBER OF INPUT RECORDS:                 225
NUMBER OF ERRORS:                          0
NUMBER OF OUTPUT PAGES:                   15

PROGRAM-NAME: ARPMSST (A00270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(page 4 of 4)

Figure AQT10-3 - continued. Procedure AQRPM10 -- program ARPMSST

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## AQDHS-II TEST 11

## Screen the Master File for Anomalous Data

In this test run, the AQDHS-II master file is screened for anomalous data using the cataloged procedure AQRPM45. This procedure executes ACVANOM (AQ0040), the anomaly screening master file conversion program; and ARPANOM (AQ0320), the anomaly screening report program.

ACVANOM (AQ0040) is the first of two programs used to screen the AQDHS-II master file for readings that are anomalous and, therefore, potentially in error. This screening of the master file is accomplished by subjecting the readings in the file to various anomaly screening tests. Presently, only non-null readings which fall into one of the categories listed in Figure AQT11-1 are screened for anomalous data. The non-null hourly readings which conform to one of the categories described above are subjected to the gap test by ACVANOM (AQ0040). All other anomaly screening tests are performed by ARPANOM (AQ0320).

The AQDHS-II parameter file is used by ACVANOM (AQ0040) to supply the standard units for the parameters to be screened. It is essential that the input parameter file contain the correct standard units for each parameter or the results of the anomaly screening tests will be invalid.

The options in this program are used to specify the kinds of daily data to be included in the temporary file passed on to ARPANOM (AQ0320). This option also affects the Shewhart test which is performed by ARPANOM (AQ0320). When the NO FLAG LOW option is specified on the option card, the Shewhart test can only identify unusually high daily data. Whereas, unusually high or low daily data can be identified when the FLAG LOW option appears on the option card. Use of the FLAG LOW option is not recommended for general purposes. The option specified must begin in card column 1 of the option card. The NO FLAG LOW option is the default value when the option card is blank or when an option card is not present in the run stream.

The output master file differs from the input master file only in the values of the status flags for the records and individual readings. The status flags enable the anomaly screening programs to perform the anomaly screening tests only on data that has not been previously screened. It is important to note that the actual readings in the master file remain unchanged. The user must decide whether the readings in the anomaly screening report should be changed in the master file.

A temporary file is produced by ACVANOM (AQ0040) containing readings from the master file which fulfill certain requirements for data that is to be screened. This file is FORTRAN-compatible.

ARPANOM (AQ0320) is the second program used to screen the AQDHS-II master file for readings that are anomalous. This program subjects all the data in the temporary file passed from ACVANOM (AQ0040) to the appropriate anomaly screening tests. Hourly readings are subjected to the pattern tests (maximum value test, adjacent hourly difference test, spike test, and modified Dixon ratio test) and daily readings are subjected to the Shewhart test.

The anomaly screening report for hourly readings identifies hourly readings that fail one or more anomaly screening test and are thereby judged anomalous. The report also includes the key information required for columns 1 through 32 of the AQDHS-II master file transactions necessary to change the readings identified as anomalous. And, for all but gap test failures, the report includes the readings (in their original format) from each master file record containing anomalous data. Beneath each reading judged anomalous by either the maximum value test, the adjacent hourly difference test, or the spike test, letters are printed representing the particular tests which failed. An 'M' is printed for a maximum value test failure, an 'A' is printed for an adjacent hourly difference test failure, and an 'S' is printed for a spike test failure. Dixon ratio test failures are indicated to the right of the day in which the anomalous readings were found and the gap test failures are indicated to the right of the month in which the anomalous readings were found.

The anomaly screening report for daily readings identifies the daily readings that fail the Shewhart test and are thereby judged anomalous. This report also includes the key information required for columns 1 through 32 of the AQDHS-II master file transactions necessary to change the readings identified as anomalous, as well as the readings (in their original format) from each master mfile record containing anomalous data.

The skeleton transactions produced by ARPANOM (AQ0320) may be used in creating AQDHS-II master file transactions to change any erroneous readings in the master file. One skeleton transaction will be included for each master file record determined to contain one or more anomalous readings. Only columns 1 through 32 and column 80 of the skeleton transaction are filled in. Entries which cannot be determined by ARPANOM (AQ0320) are represented by question marks.

Data that fails any of the anomaly screening tests should be verified. Readings found to be in error should be corrected using the skeleton transactions to update the master file. Any question marks on the skeleton transactions must be replaced by the appropriate information for that field (e.g., day, start hour, and/or decimal code). The correct reading should be entered in the appropriate position within columns 33 through 36 for daily readings (Form-2 transactions) or within columns 33 through 64 for hourly readings (Form-1 transactions). See Figure AQT5-1 for the master file transaction formats. It is recommended that when the user sends the SAROAD tape to the Regional Office, an indication be made of the readings which have been flagged as anomalous and then found to be correct.

The run stream for this test run contains the JCL necessary for screening the master file for anomalous data. This run stream is shown in Figure AQT11-2.

The cataloged procedure executed by this run stream is AQRPM45. Through the use of substitutable parameters, the input master file is specified as AQMST01N (created and stored on disk in Test 5), the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), and the output master file is named AQMST01V. The user must supply the DD (data definition) information for the option card file. The option specified in the CONVERT step of this test run is NO FLAG LOW. In this test run, the skeleton transaction file is printed for verification purposes. However, the user will typically write this file to cards or disk in order to more easily add information to the transactions. The cataloged procedure AQRPM45 is designed to write the file to disk, so in order to write the file to cards, the user must supply the appropriate DD information for the skeleton transaction file. Refer to Figure AQT11-3 for the sample output produced by this procedure.

| Pollutant | Sampling Interval | Parameter Code | AQDHS-II Time Code |
|---|---|---|---|
| Total Suspended Particulate | Daily | 11101 | 8 |
| Carbon Monoxide | Hourly | 42101 | 1 |
| Sulfur Dioxide | Hourly | 42401 | 1 |
| Sulfur Dioxide | Daily | 42401 | 8 |
| Nitrogen Dioxide | Hourly | 42602 | 1 |
| Nitrogen Dioxide | Daily | 42602 | 8 |
| Total Oxidants | Hourly | 44101 | 1 |
| Ozone | Hourly | 44201 | 1 |

Figure AQT11-1. Categories of Data Subjected to Anomaly Screening Tests

```
//AQSTST11  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQMST01V,
// DISP=(OLD,DELETE)
//*
//* SCREEN THE MASTER FILE, AQMST01N, FOR ANOMALOUS DATA
//*
//TEST11A EXEC AQRPM45,
//             OLDMSTR=AQMST01N,
//             PARMFIL=AQPARM01,
//             NEWMSTR=AQMST01V,
//             UNIT1=3330,
//             UNIT2=3330,
//             PRI1=1,
//             SEC1=1,
//             PRI2=1,
//             SEC2=1,
//             PRI3=1,
//             SEC3=1
//*
//* PRODUCE FORTRAN-COMPATIBLE FILE,
//* PRODUCE ANOMALY SCREENING REPORT
//*
//CONVERT.OPTIONS DD *
NO FLAG LOW
/*
//REPORT.FT10F001 DD SYSOUT=A
```

Figure AQT11-2. Run Stream

```
                    AQDHS-II ANOMALY SCREENING MASTER FILE CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                PAGE    1


PROGRAM NAME: ACVANOM (AQ0040)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: NO LOW SHEWHART TEST


*** ACVANOM 007 CONDITIONAL - READING(S) >  9999.9999 IN STD UNITS, SCREENING NOT PERFORMED (3400020010051-760303-424011407)


NUMBER OF MASTER FILE RECORDS READ:                                   334
NUMBER OF MASTER FILE RECORDS WRITTEN:                                334
NUMBER OF MASTER FILE RECORDS CONTAINING DATA TO BE SCREENED:          52
NUMBER OF RECORDS PASSED TO PROGRAM ARPANOM:                           83
NUMBER OF ABORT MESSAGES:                                               0
NUMBER OF CONDITIONAL MESSAGES:                                         1



------------------------------------------------------------------------------------------------------------------------------


                            AQDHS-II ANOMALY SCREENING REPORT PROGRAM  -  DIAGNOSTIC REPORT                 PAGE 1


PROGRAM NAME: ARPANOM (AQ0320)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
INCORPORATED: OCTOBER 31, 1978

OPTION IN EFFECT: NO LOW SHEWHART TEST




NUMBER OF INPUT RECORDS:                                          83
NUMBER OF INPUT RECORDS CONTAINING HOURLY DATA:                   51
NUMBER OF INPUT RECORDS CONTAINING DAILY DATA:                    29
NUMBER OF INPUT HEADER RECORDS:                                    2
NUMBER OF INPUT TRAILER RECORDS:                                   1
NUMBER OF TIMES MAXIMUM VALUE TEST FAILED:                        80
NUMBER OF TIMES ADJACENT HOURLY DIFFERENCE TEST FAILED:           31
NUMBER OF TIMES SPIKE TEST FAILED:                                 9
NUMBER OF TIMES DIXON RATIO TEST FAILED:                           3
NUMBER OF TIMES GAP TEST FAILED:                                   3
NUMBER OF TIMES SHEWHART TEST FAILED:                              5
NUMBER OF OUTPUT SKELETON TRANSACTIONS:                           19
```

(Page 1 of 4)

Figure AQT11-3.  Procedure AQRPM45 -- programs ACVANOM and ARPANOM

```
                                    AQDHS-II ANOMALY SCREENING REPORT FOR DAILY READINGS                                     PAGE    1

------------- COLUMNS 1 THRU 32 -------------  -----  --------------------------------------------------------------------------  ------
0 00 0000 001 1 11 1 11 11 12 22 22222 22 33 3                                                                                      SHEWHT
1 23 4567 890 1 23 4 56 78 90 12 34567 89 01 2  DAYS   READINGS(FORMAT IS N XXXX WHERE N=DECIMAL PT INDICATOR, XXXX=READING)  TEST
----------------------------------------------  -----  --------------------------------------------------------------------------  ------

2-34-0001-004-A-06-8-77-01-**-00-11101-91-01-*   1- 8  0 0035   0 9999   0 9999   0 9999   0 9999   0 9999   0 0964   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 0025   0 9999   0 9999   0 9999
                                                17-20  0 9999   0 9999   0 9999   0 0000

2-34-0001-004-A-06-8-77-02-**-00-11101-91-01-*   1- 8  0 0455   0 0455   0 0455   0 0455   0 0455   0 0455   0 0455   0 0455   FAIL
                                                 9-16  0 0455   0 0455   0 0455   0 0065   0 0455   0 0455   0 0455   0 0455
                                                17-24  0 0455   0 0119   0 0455   0 0455   0 0455   0 0455   0 0455   0 0455

2-34-0001-003-A-06-8-76-12-**-00-42401-91-01-*   1- 8  0 1500   0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 9999   1 0000   0 9999   0 9999
                                                17-24  0 9999   0 9999   0 9999   1 0014   0 9999   0 9999   0 9999   0 9999
                                                25-26  0 9999   1 0000

2-34-0001-003-A-06-8-77-01-**-00-42401-91-01-*   1- 8  1 0000   0 1500   0 9999   0 9999   0 9999   0 9999   1 0000   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   1 0012   0 9999   0 9999   0 9999
                                                17-24  0 9999   0 9999   1 0034   0 9999   0 9999   0 9999   0 9999   0 9999
                                                25-31  1 0000   0 9999   0 9999   0 9999   0 9999   0 9999   1 0000

2-34-0001-003-A-06-8-77-03-**-00-42401-91-01-*   1- 8  0 9999   1 0113   0 9999   0 9999   0 9999   0 9999   0 9999   1 0074   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 9999   1 0076   0 9999   0 9999
                                                17-24  0 9999   0 9999   0 9999   1 0143   0 9999   0 9999   0 9999   0 9999
                                                25-26  0 9999   0 9450

*  DECIMAL PT INDICATORS ARE LISTED WITH READINGS
** DAY VARIES, VALID ENTRIES ARE 1 THRU 31
```

(Page 2 of 4)

Figure AQT11-3 - continued. Procedure AQRPM45 -- program ARPANOM

```
                        AQDHS-II ANOMALY SCREENING REPORT FOR HOURLY READINGS                                              PAGE   2

------------- COLUMNS 1 THRU 32 --------------  ----------------------------------------------------------------------  ----   ----
0 00 0000 001 1 11 1 11 11 12 22 22222 22 33 3  READINGS(FORMAT IS N XXXX WHERE N=DECIMAL PT INDICATOR, XXXX=READING)  D R    GAP
1 23 4567 890 1 23 4 56 78 90 12 34567 89 01 2    CC33     CC37     CC41     CC45     CC49     CC53     CC57     CC61   TEST   TEST
----------------------------------------------  ----------------------------------------------------------------------  ----   ----

1-34-0002-001-D-05-1-76-01-05-XX-42401-14-07-*                                                                         N/A
                                  00             3 0515   0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   0 9999
                                                   M
                                  08             0 9999   0 9999   0 9999   0 9999   3 0008   3 0007   3 0008   3 0006

                                  16             3 0006   3 0004   3 0004   3 0002   3 0002   3 0001   3 0000   3 0000

1-34-0002-001-D-05-1-76-01-06-XX-42401-14-07-*                                                                         FAIL
                                  00             3 0000   3 0000   3 0000   3 0000   3 0000   3 0000   3 0000   3 0000

                                  08             3 0000   3 0000   2 0040   3 0006   3 0008   3 0013   3 0014   3 0016
                                                            AS       AS       AS
                                  16             3 0014   3 0004   3 0001   3 0001   0 9999   3 0000   3 0000   3 0000

1-34-0002-001-D-05-1-76-01-??-??-42401-14-07-*                                                                                FAIL

1-34-0002-001-D-05-1-76-02-23-XX-42401-14-07-*                                                                         PASS
                                  00             3 0020   3 0020   3 0020   3 0025   3 0025   3 0180   3 0205   3 0310
                                                                                                          S        S
                                  08             3 0230   3 0165   3 0245   3 0060   3 0045   3 0135   3 0125   3 0035
                                                   S
                                  16             3 0030   3 0055   3 0020   3 0025   3 0080   3 0335   3 0180   3 0020
                                                                                       AS       AS       AS
1-34-0002-001-D-05-1-76-02-24-XX-42401-14-07-*                                                                         PASS
                                  00             3 0000   3 0000   3 0005   3 0015   3 0005   3 0000   3 0000   3 0010

                                  08             3 0035   3 0160   3 0025   3 0010   3 0010   3 0010   3 0010   3 0005

                                  16             3 0010   3 0040   3 0135   3 0215   3 0330   3 0500   3 0305   3 0225
                                                                              A        AS       AMS      AS
1-34-0002-001-D-05-1-76-03-01-XX-42401-14-07-*                                                                         FAIL
                                  00             3 0000   3 0000   3 0000   3 0000   3 0000   3 0000   3 0000   3 0000

                                  08             3 00[illegible]0   3 0855   3 0006   3 0011   3 0014   0 9999   3 0025   3 0017
                                                   AS       AMS      AS
                                  16             3 0019   3 0013   3 0010   3 0009   3 0007   3 0004   3 0002   3 0000

*  DECIMAL PT INDICATORS ARE LISTED WITH READINGS
** TEST CODES (PRINTED BELOW READINGS): A=ADJACENT HOURLY DIFFERENCE TEST, M=MAXIMUM VALUE TEST, S=SPIKE TEST
```

(Page 3 of 4)

Figure AQT11-3 - continued. Procedure AQRPM45 -- program ARPANOM

```
1100001001F021710605??424011107?                                                      3
1100001001F021710606??424011107?                                                      3
1100001001F021710607??424011107?                                                      3
1100001001E021710621??424011107?                                                      3
1100001001E021710622??424011107?                                                      3
1100001001F0217106????424011107?                                                      3
1340002001D05176010 5??424011407?                                                      3
1340002001D051760106??424011407?                                                      3
1340002001D0517601????424011407?                                                      3
1340002001D051760223??424011407?                                                      3
1340002001D051760224??424011407?                                                      3
1340002001D051760301??424011407?                                                      3
1340002001D051760302??424011407?                                                      3
1340002001D0517603????424011407?                                                      3
2340001004A0687701??0011101910 1?                                                      3
2340001004A0687702??00111019101?                                                      3
2340001003A0687612??00424019101?                                                      3
2340001003A0687701??00424019101?                                                      3
2340001003A0687703??00424019101?                                                      3
```

(Page 4 of 4)

Figure AQT11-3 - continued. Procedure AQRPM45 -- program ARPANOM

## AQDHS-II TEST 12

### Submit Quarterly Report to SAROAD

In this test run, data from the AQDHS-II master file are converted to SAROAD transactions using the cataloged procedure AQRPM05. This procedure executes ARPSARD (AQ0220), the AQDHS-II to SAROAD conversion program.

ARPSARD (AQ0220) provides the user with the capability of extracting data from the AQDHS-II master file for inclusion in the SAROAD data base. Only data that have not been previously submitted to SAROAD will be extracted.

The option in this program is used to specify the date to be used in selecting records from the master file. All records dated on or before the option date will be selected for processing. For example, a record dated February 1979 (7902) would be selected for processing if the option date were March 1979 (7903). A record dated after the option date will not be selected for SAROAD processing. The date on the option card is coded in card columns 1 through 4. The first two columns specify the year and the second two specify the month. If no option card is submitted, or if the option date is invalid, all records will be processed by this program.

The output AQDHS-II master file differs from the input master file in that the status flags have been changed as necessary. The output master file might contain fewer records than the input master file since some records may have been deleted.

The output SAROAD files contain SAROAD format transactions. Only data which have not previously been sent to SAROAD are contained in these files. The SAROAD add file begins with a '$2' action card followed by all add transactions, if any; and the SAROAD change file begins with a '$3' action card followed by all change transactions, if any. For data to be deleted from the SAROAD data base, transactions are included in the SAROAD change file to change the data to 9999. When these files are processed at the regional office, the SAROAD editor (NA027) must be executed using the DELETES option since the SAROAD change file may contain transactions to delete data from the SAROAD data base.

The run stream for this test run contains the JCL necessary for converting data from the AQDHS-II master file into SAROAD transactions. This run stream is shown in Figure AQT12-1.

The cataloged procedure executed by this run stream is AQRPM05. Through the use of substitutable parameters, the input master file is specified as AQMST01V (created in and stored on disk in Test 11), and the output master file is named AQMST01T. In this test run, the SAROAD add file and the SAROAD change file are printed for verification purposes. However, the user will typically use the cataloged procedure as designed to write these files to tape in order to submit them to SAROAD. No option card is provided in this run stream causing the default option to be in effect. Thus, all data not previously submited to SAROAD will be submitted by this run. If the user does provide an option card in the run stream, the DD (data definition) information for the option card file in the SUBMIT step is also needed. Refer to Figure AQT12-2 for the sample output produced by this procedure.

```
//AQSTST12  JOB  RTI.C44.PU2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PU2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQMST01T,
// DISP=(OLD,DELETE)
//*
//* SUBMIT QUARTERLY REPORT TO SAROAD FROM AQMST01V,
//* THE VERIFIED FILE IN TEST 11
//* ALL RECORDS ARE SENT, NO THRESHOLD MONTH (NO OPTION CARD)
//*
//TEST12A EXEC AQRPM05,
//             ULDMSTR=AQMST01V,
//             NEWMSTR=AQMST01T,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* GENERATE NEW AQDHS-II FILE WITH ALL RECORDS FLAGGED SENT,
//* SAROAD ADD FILE (PRINTED),
//* AND.SAROAD CHANGE FILE (PRINTED)
//*
//SUBMIT.STEPLIB DD DISP=(SHR,PASS),
// VOL=(PRIVATE,RETAIN),DSN=CN.EPALMH.A087.AQS.LOAD.TEST
//SUBMIT.AQSADDFL DD SYSOUT=A
//SUBMIT.AQSCHGFL DD SYSOUT=A
```

Figure AQT12-1.  Run Stream

```
                    AQDHS-II TO SAROAD CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1


PROGRAM NAME: ARPSARD (AQ0220)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

NO SELECTION DATE OPTION USED - ALL RECORDS AVAILABLE FOR SAROAD OUTPUT

NUMBER OF FILE RECORDS READ:                                          334
NUMBER OF MASTER FILE RECORDS DELETED USING THE CHANGE OPTION:          0
NUMBER OF FILE RECORDS WRITTEN:                                       334
NUMBER OF ADD TRANSACTIONS SUBMITTED TO SAROAD:                       738
NUMBER OF CHANGE TRANSACTIONS SUBMITTED TO SAROAD:                      0
NUMBER OF ADD READINGS SUBMITTED TO SAROAD:                         4,435
NUMBER OF CHANGE READINGS SUBMITTED TO SAROAD:                          0
```

(Page 1 of 3)

Figure AQT12-2. Procedure AQRPM05 -- program ARPSARD

```
$2    ADD TRANSACTIONS CREATED BY AQDHS
1100001001E021710601004240111072 001 001 001 001 002 002 001 002 003 003 003 003
1100001001E021710601124240111072 004 006 002 001 001 000 000 000 000 000 000 000
1100001001E021710602004240111072 002 003 006 007 010 011 012 013 012 011 009 008
1100001001E021710602124240111072 006 006 006 006 006 003 001 004 006 008 007 007
1100001001E021710603004240111072 007 002 001 001 001 001 001 001 003 003 006 003
1100001001E021710603124240111072 002 003 003 006 010 011 011 012 013 016 016 016
1100001001E021710604004240111072 018 020 022 022 022 024 018 018 010 002 001 001
1100001001E021710604124240111072 001 001 001 001 001 001 001 001 001 001 002 002
1100001001E021710605004240111072 003 004 004 004 004 005 006 006 006 006 004 004
1100001001E021710605124240111072 003 003 003 003 003 006 018 020 034 044 054 060
1100001001E021710606004240111072 080 100 101 102 102 110 113 110 110 121 110 109
1100001001E021710606124240111072 080 080 090 090 099 099 099 100 100 100 121 122
1100001001E021710607004240111072 248 200 201 181 176 154 121 100 090 080 070 060
1100001001E021710607124240111072 040 030 020 010 009 008 007 006 006 006 006 006
1100001001E021710608004240111072 005 005 004 003 002 001 001 001 001 001 001 001
1100001001E021710608124240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710609004240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710609124240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710610004240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710610124240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710611004240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710611124240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710612004240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710612124240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710613004240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710613124240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710614004240111072 003 003 003 003 003 002 002 002 002 002 002 002
1100001001E021710614124240111072 003 003 003 003 003 002 002 002 002 002 002 002
1100001001E021710615004240111072 003 003 003 003 002 002 002 002 002 002 002 002
1100001001E021710615124240111072 003 003 003 003 003 002 002 002 002 002 002 002
1100001001E021710616004240111072 003 003 003 003 003 002 002 002 002 002 002 002
1100001001E021710616124240111072 001 001 001 001 002 002 001 002 003 003 003 003
1100001001E021710617004240111072 004 006 002 001 001 000 000 000 000 000 000 000
1100001001E021710617124240111072 002 003 006 007 010 011 012 013 012 011 009 008
1100001001E021710618004240111072 006 006 006 006 006 003 001 004 006 008 007 007
1100001001E021710618124240111072 007 002 001 001 001 001 001 001 003 003 006 003
1100001001E021710619004240111072 002 003 003 006 010 011 011 012 013 016 016 016
1100001001E021710619124240111072 018 020 022 022 022 024 018 018 010 002 001 001
1100001001E021710620004240111072 001 001 001 001 001 001 001 001 001 001 002 002
1100001001E021710620124240111072 003 004 004 004 004 005 006 006 006 006 004 004
1100001001E021710621004240111072 003 003 003 003 003 006 018 020 034 044 054 060
1100001001E021710621124240111072 080 100 101 102 102 110 113 110 110 121 110 109
1100001001E021710622004240111072 080 080 090 090 099 099 099 100 100 100 121 122
1100001001E021710622124240111072 248 200 201 181 176 154 121 100 090 080 070 060
1100001001E021710623004240111072 040 030 020 010 009 008 007 006 006 006 006 006
1100001001E021710623124240111072 005 005 004 003 002 001 001 001 001 001 001 001
1100001001E021710624004240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710624124240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710625004240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710625124240111072 001 001 001 001 001 001 001 001 001 001 001 001
1100001001E021710626004240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710626124240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710627004240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710627124240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710628004240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710628124240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710629004240111072 002 002 002 002 002 002 002 002 002 002 002 002
1100001001E021710629124240111072 003 003 003 003 003 002 002 002 002 002 002 002
1100001001E021710630004240111072 003 003 003 003 003 002 002 002 002 002 002 002
1100001001E021710630124240111072 003 003 003 003 002 002 002 002 002 002 002 002
```

(Page 2 of 3)

Figure AQT12-2 - continued.  AQRPM05 -- program ARPSARD

```
53   CHANGE TRANSACTIONS CREATED BY AQDHS. RUN SAROAD EDITOR WITH DELETES OPTION
```

(Page 3 of 3)

Figure AQT12-2 - continued. Procedure AQRPM05 -- program ARPSARD

## AQDHS-II TEST 13

### Retrieve a Standard Answer File From the Master File

In this test run, a standard answer file is retrieved from the AQDHS-II master file using the cataloged procedure AQRTM10. This procedure executes ARTLNGP (AQ0110), the retrieval language processor program; the COBOL compiler; the linkage editor; and the generated retrieval program, ARTGENR (AQ0120).

ARTLNGP (AQ0110) is the first of two AQDHS-II programs used to retrieve data from the AQDHS-II master file. The second program is ARTGENR (AQ0120), the program generated by ARTLNGP (AQ0110).

ARTLNGP (AQ0110) uses the retrieval skeleton program ARTSKEL, which is stored in a cataloged source library, and the user-supplied retrieval specification cards to build ARTGENR (AQ0120), which is referred to as the generated retrieval program.

The retrieval specification cards consist of retrieval control cards and retrieval request cards. The control cards indicate the beginning and end of the retrieval specifications: a $$SELECT card indicates the beginning of the retrieval specifications and a $$END card indicates the end of the retrieval specifications. Retrieval request cards follow the $$SELECT card and can be written in either the AQDHS-II retrieval language or in COBOL. These cards precisely identify the data to be retrieved from the master file. When the AQDHS-II retrieval language is used, up to 20 retrievals can be batched in one run, by preceeding each retrieval by a $$SELECT card and entering a $$END card after the last retrieval.

The options allowed for ARTLNGP (AQ0110) are entered on the first $$SELECT retrieval control card. The options specify whether the requests are written in the AQDHS-II retrieval language or in COBOL, the retrieval mode (STANDARD or SLIDING), and whether or not the LIST option is to be in effect.

The $$SELECT card also contains the copy member names required for certain COBOL retrievals and the name to be assigned to the generated retrieval load module should the user want to save it.

The format of the retrieval control cards is illustrated in Figure AQT13-1 and the definitions of the AQDHS-II retrieval control card fields are provided in Figure AQT13-2. Figure AQT13-3 lists possible combinations of the options for different types of retrievals.

When the AQDHS-II retrieval language is used, the user is allowed to select records from the AQDHS-II master file based upon the value of specific fields in the master file records. The data names which can be used for these AQDHS-II retrieval language requests are listed in Figure AQT13-4 and each of these data names is defined in Figure AQT13-5. The AQDHS-II retrieval language specifications are written in the format described in Figure AQT13-6 and Figure AQT13-7 provides definitions of the AQDHS-II retrieval language specification fields. The AQDHS-II retrieval specifications load sheet is provided in Figure AQT13-8.

If the COBOL language is used, the retrieval request cards are prepared according to COBOL rules for syntax and punctuation. Any retrieval that can be run using the AQDHS-II retrieval language can also be run by specifying USER as the language keyword (see Figure AQT13-1) and using the COBOL language, but nothing is gained in these retrievals by using COBOL when the AQDHS-II retrieval language can be used. There are some retrievals which cannot be accomplished using the AQDHS-II retrieval language. This is when COBOL retrievals become very beneficial. Ad Hoc Tests 1, 2, and 7 demonstrate the use of COBOL retrievals.

ARTGENR (AQ0120) is produced based on the retrieval specifications entered into ARTLNGP (AQ0110). This generated retrieval program must be compiled and link edited before it is executed. When it is executed, it reads the AQDHS-II master file and selects those records which satisfy the retrieval specifications that were entered into ARTLNGP (AQ0110). The selected records are written to an output file which is referred to as an AQDHS-II answer file.

This file is only a subset of the master file; any changes made to the answer file during the retrieval process are not reflected in the master file. The answer file has the same format as the AQDHS-II master file and may be used as input to any AQDHS-II program which uses the master file as input.

The run stream for this test run contains the JCL necessary for retrieving a standard answer file from an AQDHS-II master file. This run stream is shown in Figure AQT13-9.

The cataloged precedure executed by this run stream is AQRTM10. Through the use of substitutable parameters, the input master file is specified as AQMST01T (created and stored on disk in Test 12) and the output answer file is named AQRETR01. The user must supply the appropriate DD (data definition) information for the input retrieval specification cards in the COMPILE step. In this test run, the input retrieval specification cards are used to produce a standard answer file containing all 1977 data in the master file. Refer to Figure AQT13-10 for the sample output produced by this procedure.

| Record Position | Field Length | Description |
|---|---|---|
| 1 - 8 | 8 | Card type |
| 9 | 1 | Unused |
| 10 - 13 | 4 | Language keyword |
| 14 - 15 | 2 | Unused |
| 16 - 23 | 8 | COBOL member name |
| 24 | 1 | Unused |
| 25 - 32 | 8 | Mode keyword |
| 33 | 1 | Unused |
| 34 - 39 | 6 | List option |
| 40 - 42 | 3 | Unused |
| 43 - 50 | 8 | User-defined data member name |
| 51 | 1 | Unused |
| 52 - 59 | 8 | User-defined subroutine member name |
| 60 | 1 | Unused |
| 61 - 67 | 7 | Generated load module name |
| 68 - 72 | 5 | Unused |
| 73 - 80 | 8 | Sequence number |

Figure AQT13-1. AQDHS-II Retrieval Control Card

Card Type: Identifies the type of control card.

Valid Codes: $$SELECT - Specifies the beginning of a retrieval request.

$$END - Specifies the end of a retrieval request and must appear alone on the card.

Field Length: 8 characters.

Language Keyword: Identifies the type of retrieval language to be used.

Valid Code: USER - Retrieval specifications will be COBOL language statements.

blank - Indicates that AQDHS-II retrieval language specifications will be used.

Field Length: 4 characters.

COBOL Member Name: Indicates the name of a COBOL copy member residing in a partitioned data set and containing COBOL language statements. A copy member can be used for USER retrievals or in conjunction with a user-defined data member and user-defined subroutine member.

Valid Code: blank - Specifies that the COBOL retrieval statements will be placed after the $$SELECT card.

member name - Specifies the name of the member of an external source library where the COBOL retrieval statements reside. These COBOL statements must have been stored in the external source library under this member name prior to the execution of the retrieval.

Field Length: 8 characters.

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Figure AQT13-2. Definition of AQDHS-II Retrieval Control Card Fields

Mode Keyword: Identifies the retrieval mode.

Valid Codes: blank - Standard answer file is to be created.

SLIDING - Sliding average answer file is to be created. The sliding average answer file contains additional records to those meeting the retrieval specifications. These records provide the wraparound capability required by the sliding average program, ASTSLAV (AQ0180), in calculating sliding averages.

Field Length: 8 characters.

List Option: Identifies whether or not the retrieved records are to be printed.

Valid Codes: LIST - print all retrieved records.

NOLIST - Print no records.

blank - Print no records.

Field Length: 6 characters.

User-Defined Data Member Name: Identifies the name of a member in an external source library containing a COBOL 01-level data structure. This data member is used to define variables for user-defined subroutines, and it must be used in conjunction with a COBOL member, user-defined subroutines, and AQDHS-II retrieval language specifications.

Valid Codes: blank - No user-defined data will be used.

member name - The member of an external source library which is to be copied into the working-storage section and assigned the label, 01

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Figure AQT13-2 - continued. Definition of AQDHS-II Retrieval Control Card Fields

USER-DATA-STRUCTURE, when the retrieval program is generated.

Field Length: 8 characters.

User-Defined Subroutine Member Name: Identifies the name of a member in an external source library containing a user-defined subroutine. The user-defined subroutine can be invoked only by the user-written COBOL statements defined in the COBOL member (columns 16-23). The user-defined subroutine must be a closed subroutine; i.e., it cannot call any other subroutines. This option must be used in conjunction with a user-defined data member name, a COBOL member name and AQDHS-II retrieval language specifications.

Valid Codes: blank - No user-defined subroutine will be used.

member name - The name of the member of an external source library which contains the subroutine to be copied.

Field Length: 8 characters.

Generated Load Module Name: Specifies the user-defined load module name when the procedure AQRTM20 is used to create and store the load module of a generated retrieval program. When this field is used, the name specified must also be used for the substitutable parameter, PGMSAVE, in the job stream for procedure AQRTM20.

Valid Code: blank - The name ARTGENR will be used for the generated load module.

load module name - Must be seven characters or less consisting of the letters A-Z and the digits 0-9 and beginning with a letter.

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Figure AQT13-2 - continued. Definition of AQDHS-II Retrieval Control Card Fields

Field Length: 7 characters.

Sequence Number: An optional entry to allow the retrieval specification cards to be numbered sequentially. No sequence checking is performed by ARTLNGP (AQ0110).

Field Length: 8 characters.

(Page 4 of 4)

Figure AQT13-2 - continued. Definition of AQDHS-II Retrieval Control Card Fields

| Type of Retrieval | Card Type | Language Keyword | COBOL Member Name | Mode Keyword | List Option | User-defined Data Member Name | User-defined Subroutine Member Name | Generated Load Module Name | Batching of Retrievals Allowed |
|---|---|---|---|---|---|---|---|---|---|
| | Option Fields on $$SELECT Card | | | | | | | | |
| AQDHS-II Retrieval Language | R | N | N | O | O | N | N | O | * |
| COBOL retrieval with COBOL statements in retrieval specification card file | R | R | N | O | O | N | N | O | N |
| COBOL retrieval with COBOL statements in COBOL copy member | R | R | R | O | O | N | N | O | N |
| COBOL retrieval with COBOL statements in COBOL copy member which uses user-defined data definitions and user-defined subroutine | R | N | R | O | O | R | R | O | N |

| | |
|---|---|
| N | Not allowed |
| O | Option |
| R | Required |
| * | If the mode keyword is blank (standard retrieval), batching of retrievals is allowed. If the mode keyword is SLIDING (sliding average retrieval), batching of retrievals is not allowed. |

Figure AQT13-3. Retrieval Options

Data Names for AQDHS-II and COBOL Language Retrievals

| Data Name | Field Length | Data Name | Field Length |
|---|---|---|---|
| ACTION-CODE | 1 | KEY-3 | 6 |
| AGENCY | 1 | METHOD-CODE | 2 |
| AQCR | 3 | MONTH | 2 |
| AREA-CODE | 4 | NBR-OF-READINGS | 2 |
| COMPOSITE-KEY-3 | 6 | PARAMETER-CODE | 5 |
| COMPOSITE-PERIOD | 2 | PROJECT | 2 |
| COMPOSITE-SAMPLES | 2 | RECORD-STATUS-FLAG | 1 |
| COMPOSITE-TIME-CODE | 1 | SITE | 3 |
| COMPOSITE-TYPE | 1 | SLAMS-ID | 1 |
| COUNTY-CODE | 4 | START-HOUR | 2 |
| DATA-FIELD* | See Figure AQT13-5 | STATE | 2 |
| DAY-CODE | 2 | STATUS-FLAG* | 1 |
| FORM-CODE | 1 | TIME-CODE | 1 |
| IDENT-KEY | 37 | UNIT-CODE | 2 |
| KEY-1 | 22 | YEAR | 2 |
| KEY-2 | 9 | | |

Data Names for COBOL Language Retrievals Only

| Data Name | Field Length |
|---|---|
| DECIMAL-CODE* | 1 |
| KEY-1-A | 20 |
| RPTING-SECTION* | 6 |

---

*Repeating data names.

Figure AQT13-4. Valid Retrieval Data Names

ACTION-CODE: Indicates the last action performed on the master file record.

Valid Codes: 2 - Add
3 - Change

Field Length: 1 character.

AGENCY: Identifies the agency responsible for the sampling site.

Valid Codes: See Table A-1, AQDHS-II User's Guide.

Field Length: 1 character.

AQCR: Identifies the AQCR (Air Quality Control Region) in which the sampling site is located.

Valid Codes: 001-247

Field Length: 3 characters.

AREA-CODE: Identifies the geographical area in which the sampling site is located.

Valid Codes: Contact the EPA Regional Office for the valid codes.

Field Length: 4 characters.

COMPOSITE-KEY-3: Identifies, as a group the following fields:

COMPOSITE-PERIOD
COMPOSITE-SAMPLES
COMPOSITE-TYPE
COMPOSITE-TIME-CODE

Field Length: 6 characters.

COMPOSITE-PERIOD: Identifies the period during which the composite sample was taken.

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Figure AQT13-5. Definition of Retrieval Data Names

| | | |
|---|---|---|
| Valid Codes: | 01 - 04 | Quarterly and Seasonal Composite |
| | 01 - 12 | Monthly Composite |
| | 01 - 52 | Weekly Composite |
| | 00 | Annual Composite |

Field Length: 2 characters.

COMPOSITE-SAMPLES: Indicates the number of individual samples that were composited.

Field Length: 2 characters.

COMPOSITE-TIME-CODE: Indicates the interval at which the individual composited samples were taken.

Valid Codes: SAROAD time codes are used; see Table A-3, AQDHS-II User's Guide.

Field Length: 1 character.

COMPOSITE-TYPE: Indicates the interval for which the samples were composited.

Valid Codes:
1 - Quarterly Composite
2 - Seasonal Composite
3 - Monthly Composite
4 - Weekly Composite
5 - Annual Composite

Field Length: 1 character.

COUNTY-CODE: Identifies the county in which the sampling site is located.

Field Length: 4 characters.

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Figure AQT13-5 - continued. Definition of Retrieval Data Names

*DATA-FIELD: The value of the sample taken.

Valid Codes: When DATA-FIELD is used in COBOL retirevals, it only refers to the four-digit reading and does not incorporate the decimal code; however, when DATA-FIELD is used in AQDHS-II Retrieval Language, it refers to the value of the sample, taking into account the decimal code. When DATA-FIELD is used as the subject name in an AQDHS-II language retrieval, the object name may be DATA-FIELD or any numeric literal within apostrophes, positive or negative, with or without a decimal point.

DAY-CODE: The day of the month on which the sample was taken.

Field Length: 2 characters.

*DECIMAL-CODE (COBOL Language Only): Indicates the position of an assumed decimal within the four-character reading in the master file record.

Valid Codes: 0, 1, 2, 3, 4

Field Length: 1 character.

FORM-CODE: Indicates which transaction format was used to create the master file record.

Valid Codes: 1 - Form 1
2 - Form 2
3 - Form 3

Field Length: 1 character.

---

*A repeating field.

(Page 3 of 8)

Figure AQT13-5 - continued. Definition of Retrieval Data Names

IDENT-KEY: Identifies, as a group, the following fields:

KEY-1
KEY-2
KEY-3

Field Length: 37 characters.

KEY-1: Identifies, as a group, the following fields:

STATE
AQCR
COUNTY-CODE
AREA-CODE
SITE
AGENCY
PROJECT-CODE
TIME-CODE
YEAR

Field Length: 22 characters.

KEY-1-A (COBOL Language Only): Identifies, as a group, the following fields:

STATE
AQCR
COUNTY-CODE
AREA-CODE
SITE
AGENCY
PROJECT
TIME-CODE

Field Length: 20 characters.

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Figure AQT13-5 - continued. Definition of Retrieval Data Names

KEY-2: Identifies, as a group, the following fields:

PARAMETER-CODE
METHOD-CODE
UNIT-CODE

Field Length: 9 characters.

KEY-3: Identifies, as a group, the following fields:

MONTH
DAY-CODE
START-HOUR

Field Length: 6 characters.

METHOD-CODE: Identifies both the collection method and the analysis method for the parameter being measured.

Field Length: 2 characters.

MONTH: The month of the year during which the sample was taken.

Field Length: 2 characters.

NBR-OF-READINGS: Indicates the number of readings or samples contained in the master file record.

Field Length: 2 characters.

PARAMETER-CODE: Identifies the parameter being measured.

Valid Codes: Refer to the AEROS Manual Series, Volume V: AEROS Manual of Codes for a full list of currently accepted parameter codes.

Field Length: 5 characters.

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Figure AQT13-5 - continued. Definition of Retrieval Data Names

PROJECT: Identifies the project in association with which the sample was taken.

Valid Codes: See Table A-2, AQDHS-II User's Guide.
Field Length: 2 characters.

RECORD-STATUS-FLAG: Indicates the SAROAD submission status and anomaly screening status of the record.

Valid Codes: S All readings in the record have been submitted to SAROAD, but one or more non-null readings have not undergone anomaly screening.

T All readings in the record have been submitted to SAROAD and all non-null readings have undergone anomaly screening.

N One or more readings in the record have not been submitted to SAROAD, and one or more non-null readings have not undergone anomaly screening.

V One or more readings in the record have not been submitted to SAROAD, but all non-null readings have undergone anomaly screening.

X Record has been flagged for deletion, all readings are null.

Field Length: 1 character.

*RPTING-SECTION (COBOL Language Only): Identifies, as a group, the following fields:

STATUS-FLAG
DECIMAL-CODE
DATA-FIELD

Field Length: 6 characters.

---

*A repeating field.

(Page 6 of 8)

Figure AQT13-5 - continued. Definition of Retrieval Data Names

SITE: Identifies the site at which the sample was taken.
Field Length: 3 characters.

SLAMS-ID: Indicates whether the sampling site is a State and Local Air Monitoring Station (SLAMS) or a National Air Monitoring Station (NAMS) associated with the site.
Field Length: 1 character.

START-HOUR: The hour at which the first sample was taken.
Valid Codes: See Table A-3, AQDHS-II User's Guide.
Field Length: 2 characters.

STATE: Indicates the state (or other geographic division) in which the sampling site is located.
Field Length: 2 characters.

*STATUS-FLAG: Indicates the status of the reading.

| Valid Codes: | A | Reading has been added since submission to SAROAD and has not undergone anomaly screening. |
|---|---|---|
| | C | Reading has been changed since submission to SAROAD and has not undergone anomaly screening. |
| | S | Reading has been submitted to SAROAD but has not undergone anomaly screening. |
| | B | Reading has been added since submission to SAROAD and has undergone anomaly screening. |
| | D | Reading has been changed since submission to SAROAD and has undergone anomaly screening. |

---

*A repeating field.

(Page 7 of 8)

Figure AQT13-5 - continued. Definition of Retrieval Data Names

T Reading has been submitted to SAROAD and has undergone anomaly screening.

Field Length: 1 character.

TIME-CODE: Indicates the interval at which the samples were taken.

Valid Codes: See Table A-3, AQDHS-II User's Guide.

Field Length: 1 character.

UNIT-CODE: Indicates the units in which the parameter was measured.

Valid Codes: See Table A-4, AQDHS-II User's Guide for a partial list and the AEROS MANUAL SERIES, Volume V: AEROS Manual of Codes for a complete list of currently accepted units codes.

Field Length: 2 characters.

YEAR: The year in which the sample was taken.

Field Length: 2 characters.

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Figure AQT13-5 - continued. Definition of Retrieval Data Names

| Record Position | Field Length | Description |
|---|---|---|
| 1 - 22 | 22 | Subject name |
| 23 | 1 | Unused |
| 24 | 1 | Negation flag |
| 25 | 1 | Unused |
| 26 | 1 | Relational operator |
| 27 | 1 | Unused |
| 28 - 67 | 40 | Object name |
| 68 | 1 | Unused |
| 69 - 71 | 3 | Boolean operator |
| 72 - 80 | 9 | Unused |

Figure AQT13-6. AQDHS-II Retrieval Language Specifications

Subject Name: Specifies the name of the field in the AQDHS-II master file record to be compared with the literal or the master file field specified by the object name.

Valid Codes: Only those fields listed in Figure AQT13-4 can be used. The spelling, including hyphen, must match exactly.

Field Length: 22 characters.

Negation Flag: Indicates whether the Boolean NOT condition is in effect.

Valid Codes: N - Boolean NOT is in effect.
space - Boolean NOT is not in effect.

Field Length: 1 character.

Relational Operator: Indicates the relationship to be tested between the subject name and the object name.

| Valid Codes: | = | equal |
|---|---|---|
| | < | less than |
| | > | greater than |

Field Length: 1 character.

Object Name: A literal to be compared against the master file field specified by the subject name, or the name of a master file field to be compared against the master file field specified by the subject name (i.e., object name=subject name).

Valid Codes: If a literal is used, it must be enclosed in apostrophes. The length of the literal must be exactly the same as the field length of the data name being compared (see Figure AQT13-5). If the name of a field from the master file is used, it must match exactly one of the names listed in

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Figure AQT13-7. Definition of AQDHS-II Retrieval Language Specification Fields

Figure AQT13-4. However, it must not be enclosed in apostrophes.

Field Length: 40 characters.

Boolean Operator: Identifies the type of connector used between the relationship specified on this control card and that specified on the next card.

Valid Codes: AND - Indicates that both relationships must be true in order for the entire relationship to be true.

OR - Indicates that if either relationship is true, the entire relationship is true.

blank - Indicates that there is no connector, and therefore, that there is no further specification.

Field Length: 3 characters.

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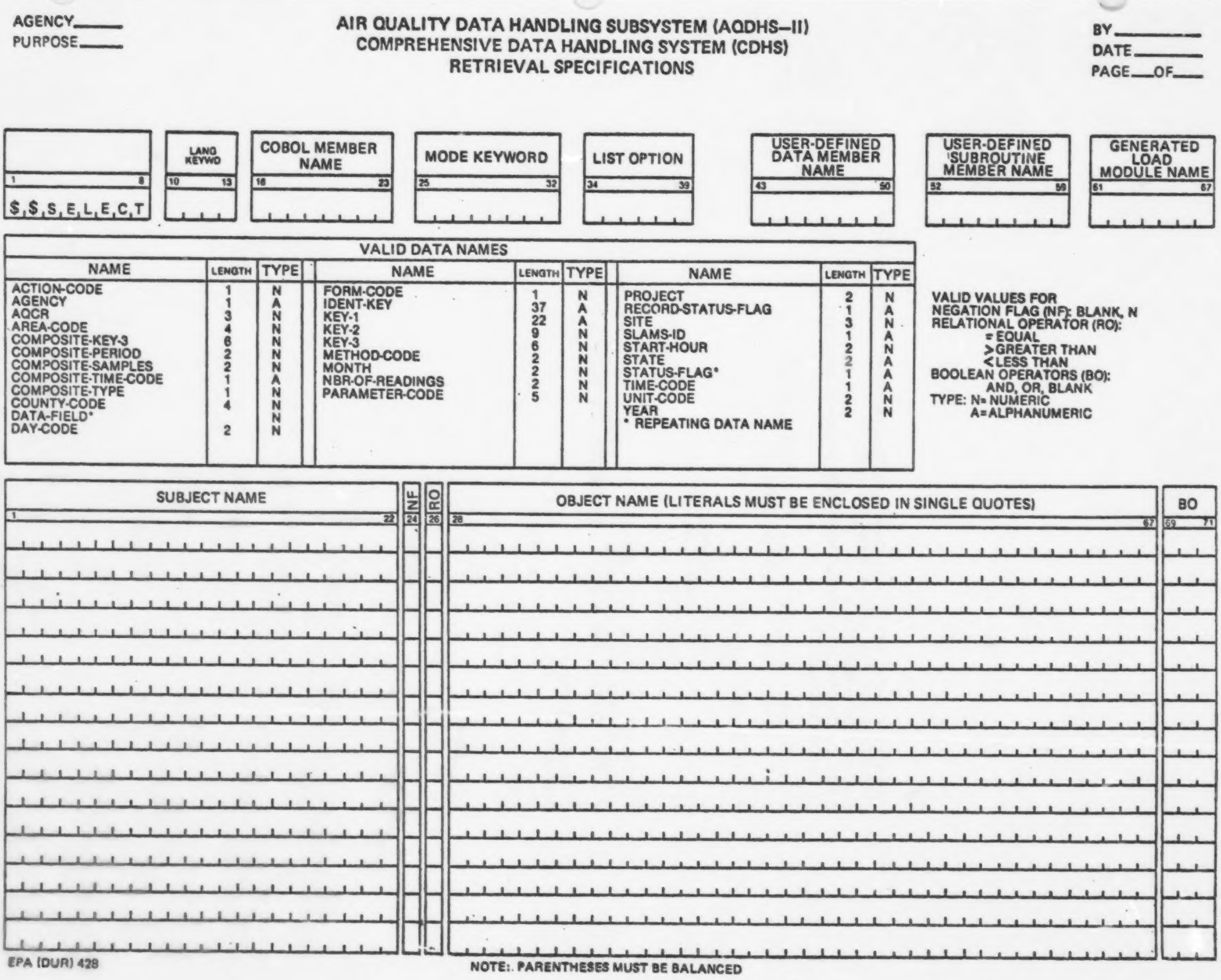
Figure AQT13-7 - continued. Definition of AQDHS-II Retrieval Language Specification Fields



AGENCY_____
PURPOSE_____

## AIR QUALITY DATA HANDLING SUBSYSTEM (AQDHS–II)
## COMPREHENSIVE DATA HANDLING SYSTEM (CDHS)
## RETRIEVAL SPECIFICATIONS

BY_____
DATE_____
PAGE___OF___

|  | LANG KEYWD | COBOL MEMBER NAME | MODE KEYWORD | LIST OPTION | USER-DEFINED DATA MEMBER NAME | USER-DEFINED SUBROUTINE MEMBER NAME | GENERATED LOAD MODULE NAME |
|---|---|---|---|---|---|---|---|
| 1 8 | 10 13 | 16 23 | 25 32 | 34 39 | 43 50 | 52 59 | 61 67 |
| $,$,S,E,L,E,C,T |  |  |  |  |  |  |  |

VALID DATA NAMES

| NAME | LENGTH | TYPE | NAME | LENGTH | TYPE | NAME | LENGTH | TYPE |
|---|---|---|---|---|---|---|---|---|
| ACTION-CODE | 1 | N | FORM-CODE | 1 | N | PROJECT | 2 | N |
| AGENCY | 1 | A | IDENT-KEY | 37 | A | RECORD-STATUS-FLAG | 1 | A |
| AQCR | 3 | N | KEY-1 | 22 | A | SITE | 3 | N |
| AREA-CODE | 4 | N | KEY-2 | 9 | N | SLAMS-ID | 1 | A |
| COMPOSITE-KEY-3 | 6 | N | KEY-3 | 6 | N | START-HOUR | 2 | N |
| COMPOSITE-PERIOD | 2 | N | METHOD-CODE | 2 | N | STATE | 2 | A |
| COMPOSITE-SAMPLES | 2 | N | MONTH | 2 | N | STATUS-FLAG* | 1 | A |
| COMPOSITE-TIME-CODE | 1 | A | NBR-OF-READINGS | 2 | N | TIME-CODE | 1 | A |
| COMPOSITE-TYPE | 1 | N | PARAMETER-CODE | 5 | N | UNIT-CODE | 2 | N |
| COUNTY-CODE | 4 | N |  |  |  | YEAR | 2 | N |
| DATA-FIELD* |  | N |  |  |  | * REPEATING DATA NAME |  |  |
| DAY-CODE | 2 | N |  |  |  |  |  |  |

VALID VALUES FOR
NEGATION FLAG (NF): BLANK, N
RELATIONAL OPERATOR (RO):
= EQUAL
> GREATER THAN
< LESS THAN
BOOLEAN OPERATORS (BO):
AND, OR, BLANK
TYPE: N= NUMERIC
A=ALPHANUMERIC

| SUBJECT NAME | NF | RO | OBJECT NAME (LITERALS MUST BE ENCLOSED IN SINGLE QUOTES) | BO |
|---|---|---|---|---|
| 1 22 | 24 | 26 | 28 67 | 69 71 |

EPA (DUR) 428

NOTE:. PARENTHESES MUST BE BALANCED

Figure AQT13-8. Retrieval Specifications Load Sheet

```
//AQSTST13  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQRETR01,
// DISP=(OLD,DELETE)
//*
//* RETRIEVE A STANDARD ANSWER FILE FROM AQMST01T,
//* THE MASTER FILE CREATED IN TEST 12
//*
//TEST13A EXEC AQRTM10,
//             MSTRFIL=AQMST01T,
//             ANSWRFL=AQRETR01,
//             DISP='NEW,CATLG,DELETE',
//             PRIMARY=1,
//             SECNDRY=1
//*
//* CREATE, COMPILE, AND LINK-EDIT RETRIEVAL SKELETON PROGRAM
//* USING RETRIEVAL LANGUAGE SPECIFICATIONS;
//* THEN EXECUTE THE PROGRAM TO RETRIEVE ALL RECORDS FROM 1977
//*
//COMPILE.INPUT DD *
$$SELECT                          LIST
YEAR                      = '77'
$$END
/*
```

Figure AQT13-9. Run Stream

```
                        AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                      PAGE     1
PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

INPUT (CONTROL CARDS):

$$SELECT                             LIST
YEAR                       = '77'
$$END

NUMBER OF CONTROL CARDS READ:                      3
NUMBER OF RETRIEVAL SKELETON RECORDS READ:     1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:    1,181
NUMBER OF CONDITIONAL MESSAGES:                    0
NUMBER OF ERROR MESSAGES:                          0
NUMBER OF ABORT MESSAGES:                          0


-------------------------------------------------------------------------------------------------------------------------------


                          AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                           PAGE     1
PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979

NUMBER OF MASTER FILE RECORDS READ:                  354
NUMBER OF ANSWER FILE RECORDS WRITTEN:               118
NUMBER OF CONDITIONAL MESSAGES:                        0
NUMBER OF ABORT MESSAGES:                              0
```

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Figure AQT13-10. Procedure AQRTM10 -- programs ARTLNGP and ARTGENR

```
                                        AQDHS-II MASTER FILE DUMP                                        PAGE    1

FIXED SEGMENT       REPEATING DATA                                                          ACTION

22T    3417029800001004A06877111019
                    101010100            20T00035S09991S09991S09991S09991S09991T00964S09991S09991S099
                    91S09991S09991T00025S09991S09991S09991S09991S09991S09991T00000

22T    3417029800001004A06877111019
                    101020100            24T00455T00455T00455T00455T00455T00455T00455T00455T00455T004
                    55T00455T00065T00455T00455T00455T00455T00455T00119T00455T00455T00455T00455T

22T    3417104800001003A06877424019
                    101010100            31T10000T01500S09991S09991S09991S09991T10000S09991S09991S099
                    91S09991S09991T10012S09991S09991S09991S09991S09991T10034S09991S09991S09991S

22T    3417104800001003A06877424019
                    101020100            24S09991S09991S09991S09991S09991T13613S09991S09991S09991S099
                    91S09991T10000S09991S09991S09991S09991S09991T10128S09991S09991S09991S09991S

22T    3417104800001003A06877424019
                    101030100            26S09991T10113S09991S09991S09991S09991S09991T10074S09991S099
                    91S09991S09991S09991T10076S09991S09991S09991S09991S09991T10143S09991S09991S

21S    371863020226099 5A05177633011
                    118080400            24S20000S20000S20000S20000S20000S20000S20000S20002S20003S200
                    36S20072S20091S20078S20086S20108S20072S09991S20036S20010S20001S20000S20000S

21S    371863020226099 5A05177633011
                    118080500            24S20000S20000S20000S20000S20000S20001S20012S20042S20050S200
                    93S20062S20114S20102S20066S20074S20044S20046S20021S20008S20004S20000S20000S

21S    371863020226099 5A05177633011
                    118080600            24S20000S20000S20000S20000S20000S20001S20010S20030S20036S200
                    38S20088S20138S20130S20096S20048S20052S20070S20038S20012S20001S20000S20000S

21S    371863020226099 5A05177633011
                    118080700            24S20000S20000S20000S20000S20000S20002S20015S20044S20072S200
                    98S20121S20134S20143S20136S20116S20097S20066S20038S20010S20002S20000S20000S

21S    371863020226099 5A05177633011
                    118080800            24S20000S20000S20000S20000S20000S20002S20014S20030S20068S200
                    98S20121S20137S20144S20142S20122S20092S20070S20039S20011S20001S20000S20000S

21S    371863020226099 5A05177633011
                    118080900            24S20000S20000S20000S20000S20000S20002S20015S20048S20068S200
                    96S20116S20126S20131S20133S20106S20093S20072S20039S20011S20000S20000S20000S

21S    371863020226099 5A05177633011
                    118081000            24S20000S20000S20000S20000S20000S20001S20016S20046S20070S200
                    80S20109S20123S20119S20141S20123S20073S20021S20028S20007S20001S20000S20000S

21S    371863020226099 5A05177633011
                    118081100            24S20000S20000S20000S20000S20000S20002S20003S20025S20052S200
                    32S20048S20091S20063S20052S20057S20032S20023S20013S20003S20001S20000S20000S

21S    371863020226099 5A05177633011
                    118081200            24S20000S20000S20000S20000S20000S20000S20004S20020S20031S200
                    51S20073S20085S20054S20044S20035S20040S20029S20016S20005S20000S20000S20000S
```

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Figure AQT13-10 - continued. Procedure AQRTM10 -- program ARTGENR

## AQDHS-II TEST 14

### Update the Parameter File

In this test run, the AQDHS-II parameter file is updated using the cataloged procedure AQEMP10 which executes ASRPARM (AQ0150), the parameter file transaction sort program, and AEMPARM (AQ0070), the parameter file maintenance program.

The same programs were used in Test 1 to create the initial parameter file. Each of the input parameter file transactions had an action code of 'A' which signifies that the data on these transactions were to be added to the parameter file. However, in this test run, not only can information be added to the file (i.e., records created), but existing parameter file records can be changed or deleted.

Changing a record requires a transaction with the same parameter, method, and unit code combination as the record to be changed. Also, this transaction must have an action code of 'C' and an appropriate card type. If these requirements are met, the non-blank fields of the transaction will replace the corresponding fields of data in the parameter file record.

Similarly, the deletion of a parameter file record requires a transaction with the same parameter, method, and unit code combination as the record to be deleted. However, the transaction must be a card type 1 transaction, have an action code of 'D', and contain blanks in the remaining transaction fields.

The run stream for this test run contains the JCL necessary for updating an AQDHS-II parameter file. This run stream is shown in Figure AQT14-1.

The cataloged procedure executed by this run stream is AQEMP10. Through the use of substitutable parameters, the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), and the new parameter file is named AQPARM02. The user must supply the DD (data definition) information for the input AQDHS-II parameter transactions file in the SORT step and the option card file in the UPDATE step. The options specified in the UPDATE step of this test run are FLAGW and LIST. Refer to Figure AQT14-2 for the sample output produced by this procedure.

```
//AQSTST14  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQPARM02,
// DISP=(OLD,DELETE)
//*
//* UPDATE THE PARAMETER FILE, AQPARM01
//*
//TEST14A EXEC AQEMP10,
//             OLDPARM=AQPARM01,
//             NEWPARM=AQPARM02,
//             PRIMARY=1,
//             SCNDARY=1
//*
//* PRESORT THE PARAMETER TRANSACTIONS,
//* THEN UPDATE THE FILE WITH THEM
//*
//SORT.INPUT DD *
1612022128
2621012015                   DEGREES FAHRENHEIT                                    D
11110391011000lBENZENE SO ORGANICS            HI-VOL                               C
2111039101BENZENE EXTRACT-SOXHLET  UGMS/M3 (25 DEG C, 1013 M-BARS)                 A
31110391010l000100000                                                              A
/*                                                                                 A
//UPDATE.OPTINS DD *
FLAGW   LIST
/*
```

Figure AQT14-1.  Run Stream

```
                        AQDHS-II PARAMETER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE  1

PROGRAM NAME: ASRPARM (AQ0150)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT TRANSACTIONS:           5
NUMBER OF OUTPUT TRANSACTIONS:          5




  -----------------------------------------------------------------------------------------------------------------------------




                        AQDHS-II PARAMETER FILE EDIT AND MAINTENANCE PROGRAM DIAGNOSTIC MESSAGES            PAGE     1
PROGRAM NAME: AEMPARM (AQ0070)
REVISION LEVEL: 1-00
INCORPORATED: OCTOBER 31, 1978
LAST UPDATE #: 24
OPTIONS IN EFFECT: FLAGW   LIST

311103910101000100000                                                           A
          *** AEMPARM 016 WARNING - ADD TRANSACTION DOES NOT SPECIFY USER UNITS CODE, ASSUMING UNITS CODE IN KEY
          *** AEMPARM 018 WARNING - ADD TRANSACTION DOES NOT SPECIFY USER UNITS CONV FAC, ASSUMING UNITY

NUMBER OF INPUT PARAMETER FILE RECORDS:       89
NUMBER OF OUTPUT PARAMETER FILE RECORDS:      89
NUMBER OF INPUT TRANSACTION CARDS:             5
NUMBER OF VALID TRANSACTION CARDS:             5
NUMBER OF REJECTED TRANSACTION CARDS:          0
NUMBER OF DISASTER MESSAGES:                   0
NUMBER OF ABORT MESSAGES:                      0
NUMBER OF ERROR MESSAGES:                      0
NUMBER OF CONDITIONAL MESSAGES:                0
NUMBER OF WARNING MESSAGES                     2
```

(Page 1 of 4)

Figure AQT14-2. Procedure AQEMP10 -- programs ASRPARM and AEMPARM

```
                                        AQDHS-II PARAMETER FILE TRANSACTTIONS                                    PAGE    1
1111039101100001BENZENE SO ORGANICS           HI-VOL                              A
2111039101BENZENE EXTRACT-SOXHLET  UGMS/M3 (25 DEG C, 1013 M-BARS)                A
31110391010100010000                                                              A
1612022128                                                                        D
2621012015                  DEGREES FAHRENHEIT                                    C
```

(Page 2 of 4)

Figure AQT14-2 - continued.  Procedure AQEMP10 -- program AEMPARM

```
                                                  INPUT AQDHS-II PARAMETER FILE                                   PAGE    1

111019101000A001000100000010001000000TOTAL SUSPENDED PARTICULATE   HI-VOL                        GRAVIMETRIC              U-GMS/M3 (25DEG
111019202001A101000091600020001000000TOTAL SUSPENDED PARTICULATE   MEMBRANE SAMPLE               GRAVIMETRIC              U-GMS/M3 (0DEG C
112018109000A201000100000009000100000SOILING INDEX (COH/1000LF)    TAPE SAMPLER                  TRANSMITTANCE            COHS/1000 LINEAR
211015190014C293000035030900001000000TOTAL SETTLED PARTICULATE     BUCKET; JAR                   GRAVIMETRIC              TONS/SQUARE MILE
211015191000E293001000000091000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR                   GRAVIMETRIC              M-GMS/SQUARE CEN
211017190014C293000035030900001000000TOTAL SETTLED PARTICULATE     BUCKET; JAR                   GRAVIMETRIC (APCA)       TONS/SQUARE MILE
211017191000E293001000000091000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR                   GRAVIMETRIC (APCA)       M-GMS/SQUARE CEN
211018190014C293000035030900001000000TOTAL SETTLED PARTICULATE     BUCKET; JAR                   GRAVIMETRIC (ASTM)       TONS/SQUARE MILE
211018191000E293001000000091000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR                   GRAVIMETRIC (ASTM)       M-GMS/SQUARE CEN
421011105057E305000100000050001000000CARBON MONOXIDE               INSTRUMENTAL                  NONDISPERSIVE INFRA-RED  M-GMS/M3 (25DEG
421011106062H305000091600060001000000CARBON MONOXIDE               INSTRUMENTAL                  NONDISPERSIVE INFRA-RED  M-GMS/M3 (0DEG C
421011107000D105000115000070001000000CARBON MONOXIDE               INSTRUMENTAL                  NONDISPERSIVE INFRA-RED  PARTS PER MILLIO
421012105006C205000100000050001000000CARBON MONOXIDE               INSTRUMENTAL                  GAS CHROMATOGRAPHIC      M-GMS/M3 (25DEG
421012107000D105000115000070001000000CARBON MONOXIDE               INSTRUMENTAL                  GAS CHROMATOGRAPHIC      PARTS PER MILLIO
421021107000A005000180000070001000000CARBON DIOXIDE                INSTRUMENTAL                  INFARARED ABSORPTION     PARTS PER MILLIO
421029105001H105000100000050001000000CARBON DIOXIDE                GAS BUBBLER                   PHENOLPHTHALEIN          M-GMS/M3 (25DEG
421029107000A005000180000070001000000CARBON DIOXIDE                GAS BUBBLER                   PHENOLPHTHALEIN          PARTS PER MILLIO
424011102028F101000091600020001000000SULFUR DIOXIDE                INSTRUMENTAL                  WEST-GAEKE COLORIMETRIC  U-GMS/M3 (0DEG C
424011107000A201262000000070001000000SULFUR DIOXIDE                INSTRUMENTAL                  WEST-GAEKE COLORIMETRIC  PARTS PER MILLIO
424011108001\001000262000080001000000SULFUR DIOXIDE                INSTRUMENTAL                  WEST-GAEKE COLORIMETRIC  PARTS PER BILLIO
424011301026B101000100000010001000000SULFUR DIOXIDE                INSTRUMENTAL                  CONDUCTOMETRIC           U-GMS/M3 (25DEG
424011302028F101000091600020001000000SULFUR DIOXIDE                INSTRUMENTAL                  CONDUCTOMETRIC           U-GMS/M3 (0DEG C
424011307000A201262000000070001000000SULFUR DIOXIDE                INSTRUMENTAL                  CONDUCTOMETRIC           PARTS PER MILLIO
424011308001\001000262000080001000000SULFUR DIOXIDE                INSTRUMENTAL                  CONDUCTOMETRIC           PARTS PER BILLIO
424011401026B101000100000010001000000SULFUR DIOXIDE                INSTRUMENTAL                  COULOMETRIC              U-GMS/M3 (25DEG
424011402028F101000091620020001000000SULFUR DIOXIDE                INSTRUMENTAL                  COULOMETRIC              U-GMS/M3 (0DEG C
424011407000A201262000000070001000000SULFUR DIOXIDE                INSTRUMENTAL                  COULOMETRIC              PARTS PER MILLIO
424011408001\001000262000080001000000SULFUR DIOXIDE                INSTRUMENTAL                  COULOMETRIC              PARTS PER BILLIO
424011601026B101000100000010001000000SULFUR DIOXIDE                INSTRUMENTAL                  FLAME PHOTOMETRIC        U-GMS/M3 (25DEG
424011707000D201262000000070001000000SULFUR DIOXIDE                INSTRUMENTAL                  POLAROGRAPHIC DYNA SCIENCPARTS PER MILLIO
424013101026B101000100000010001000000SULFUR DIOXIDE                DAVIS INSTRUMENT              HYDROGEN PEROXIDE        U-GMS/M3 (25DEG
424013302028F101000091600020001000000SULFUR DIOXIDE                DAVIS INSTRUMENT              SEQUENTIAL-CONDUCTOMETRICU-GMS/M3 (0DEG C
424019101000E001000100000010001000000SULFUR DIOXIDE                GAS BUBBLER                   PARAROSANILINE-SULFAMIC  U-GMS/M3 (25 DEG
424019107001I401262000000070001000000SULFUR DIOXIDE                GAS BUBBLER                   PARAROSANILINE-SULFAMIC  PARTS PER MILLIO
424019401000E001000100000010001000000SULFUR DIOXIDE                GAS BUBBLER                   HYDROGEN PEROXIDE        U-GMS/M3 (25DEG
426011407000A201123000000070001000000NITRIC OXIDE                  INSTRUMENTAL                  CHEIMLUMINESCENCE        PARTS PER MILLIO
426021101018H101000100000010001000000NITROGEN DIOXIDE              INSTRUMENTAL                  COLORIMETRIC-LYSHKOW     U-GMS/M3 (25DEG
426021102020E101000091600020001000000NITROGEN DIOXIDE              INSTRUMENTAL                  COLORIMETRIC-LYSHKOW     U-GMS/M3 (0DEG C
426021107000A201188000000070001000000NITROGEN DIOXIDE              INSTRUMENTAL                  COLORIMETRIC-GREISS-SALTZPARTS PER MILLIO
426021108001\001000188000080001000000NITROGEN DIOXIDE              INSTRUMENTAL                  COLORIMETRIC-GREISS-SALTZPARTS PER BILLIO
426021201018H101000100000010001000000NITROGEN DIOXIDE              INSTRUMENTAL                  COLORIMETRIC-GREISS-SALTZU-GMS/M3 (25DEG
426021207000A201188000000070001000000NITROGEN DIOXIDE              INSTRUMENTAL                  COLORIMETRIC-GREISS-SALTZPARTS PER MILLIO
426021302020E101000091600020001000000NITROGEN DIOXIDE              INSTRUMENTAL                  COULOMETRIC -GREISS-SALTZU-GMS/M3 (0DEG C
426021407000A201188000000070001000000NITROGEN DIOXIDE              INSTRUMENTAL                  CHEMILUMINESCENCE        PARTS PER MILLIO
426021408001\001000188000080001000000NITROGEN DIOXIDE              INSTRUMENTAL                  CHEMILUMINESCENCE        PARTS PER BILLIO
426021501075B101000100000010001000000NITROGEN DIOXIDE              INSTRUMENTAL                  POLAROGRAPHIC DYNA SCIENCU-GMS/M3 (25DEG
426028207002G401188000000081000000000NITROGEN DIOXIDE              GAS BUBBLER                   SALTZMAN(100ML TU+ORIFIC)PARTS PER MILLIO
426028401000E001000100000010001000000NITROGEN DIOXIDE              GAS BUBBLER                   NASN SODIUM ARSENITE     U-GMS/M3 (25DEG
426028402005E101000091600020001000000NITROGEN DIOXIDE              GAS BUBBLER                   NASN SODIUM ARSENITE     U-GMS/M3 (25DEG
426029402005E101000091600020001000000NITROGEN DIOXIDE              GAS BUBBLER                   NASN SODIUM ARSENITE     U-GMS/M3 (0DEG C
426029501000E001000100000010001000000NITROGEN DIOXIDE              GAS BUBBLER                   TEA METHOD               U-GMS/M3 (25DEG
426029602005E101000091600020001000000NITROGEN DIOXIDE              GAS BUBBLER                   TGS METHOD               U-GMS/M3 (0DEG C
426031107000A201188000000070001000000OXIDES OF NITROGEN            INSTRUMENTAL                  COLORIMETRIC             PARTS PER MILLIO
426031108001\001000188000080001000000OXIDES OF NITROGEN            INSTRUMENTAL                  COLORIMETRIC             PARTS PER BILLIO
426031307000A201188000000070001000000OXIDES OF NITROGEN            INSTRUMENTAL                  COLORIMETRIC             PARTS PER MILLIO
426031407000A201188000000081000000000OXIDES OF NITROGEN            INSTRUMENTAL                  CHEMILUMINESCENCE        PARTS PER MILLIO
426039901000E001000100000010001000000OXIDES OF NITROGEN            GAS BUBBLER                   SALTZMAN METHOD          U-GMS/M3 (25DEG
426039907002G401188000000070001000000OXIDES OF NITROGEN            GAS BUBBLER                   SALTZMAN METHOD          PARTS PER MILLIO
431011101013C001000100000010001000000TOTAL HYDROCARBONS            INSTRUMENTAL                  FLAME IONIZATION         U-GMS/M3 (25DEG
431011102013C001000091600020001000000TOTAL HYDROCARBONS            INSTRUMENTAL                  FLAME IONIZATION         U-GMS/M3 (0DEG C
```

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Figure AQT14-2 - continued. Procedure AQEMP10 -- program AEMPARM

```
                                   OUTPUT AQDHS-II PARAMETER FILE                                   PAGE    1
111019101000A00100010000001000100000TOTAL SUSPENDED PARTICULATE   HI-VOL                   GRAVIMETRIC              U-GMS/M3 (25DEG
111019202001A10100009160002000100000TOTAL SUSPENDED PARTICULATE   MEMBRANE SAMPLE          GRAVIMETRIC              U-GMS/M3 (0DEG C
111039101000A10100010000001000100000BENZENE SO ORGANICS           HI-VOL                   BENZENE EXTRACT-SOXHLET  UGMS/M3 (25 DEG
112018109000A20100010000009000100000SOILING INDEX (COH/1000LF)    TAPE SAMPLER             TRANSMITTANCE            COHS/1000 LINEAR
211015190014C29300003503090000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR              GRAVIMETRIC              TONS/SQUARE MILE
211015191000E29300100000091000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR              GRAVIMETRIC              M-GMS/SQUARE CEN
211017190014C29300003503090000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR              GRAVIMETRIC (APCA)       TONS/SQUARE MILE
211017191000E29300100000091000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR              GRAVIMETRIC (APCA)       M-GMS/SQUARE CEN
211018190014C29300003503090000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR              GRAVIMETRIC (ASTM)       TONS/SQUARE MILE
211018191000E29300100000091000100000TOTAL SETTLED PARTICULATE     BUCKET; JAR              GRAVIMETRIC (ASTM)       M-GMS/SQUARE CEN
421011105057E30500010000005000100000CARBON MONOXIDE               INSTRUMENTAL             NONDISPERSIVE INFRA-RED  M-GMS/M3 (25DEG
421011106062H30500009160006000100000CARBON MONOXIDE               INSTRUMENTAL             NONDISPERSIVE INFRA-RED  M-GMS/M3 (0DEG C
421011107000D10500011500007000100000CARBON MONOXIDE               INSTRUMENTAL             NONDISPERSIVE INFRA-RED  PARTS PER MILLIO
421012105006C20500010000005000100000CARBON MONOXIDE               INSTRUMENTAL             GAS CHROMATOGRAPHIC      M-GMS/M3 (25DEG
421012107000D10500011500007000100000CARBON MONOXIDE               INSTRUMENTAL             GAS CHROMATOGRAPHIC      PARTS PER MILLIO
421021107000A00500018000007000100000CARBON DIOXIDE                INSTRUMENTAL             INFARARED ABSORPTION     PARTS PER MILLIO
421029105001H10500010000005000100000CARBON DIOXIDE                GAS BUBBLER              PHENOLPHTHALEIN          M-GMS/M3 (25DEG
421029107000A00500018000007000100000CARBON DIOXIDE                GAS BUBBLER              PHENOLPHTHALEIN          PARTS PER MILLIO
424011102028F10100009160002000100000SULFUR DIOXIDE                INSTRUMENTAL             WEST-GAEKE COLORIMETRIC  U-GMS/M3 (0DEG C
424011107000A20126200000007000100000SULFUR DIOXIDE                INSTRUMENTAL             WEST-GAEKE COLORIMETRIC  PARTS PER MILLIO
424011108001\00100026200008000100000SULFUR DIOXIDE                INSTRUMENTAL             WEST-GAEKE COLORIMETRIC  PARTS PER BILLIO
424011301026B10100010000001000100000SULFUR DIOXIDE                INSTRUMENTAL             CONDUCTOMETRIC           U-GMS/M3 (25DEG
424011302028F10100009160002000100000SULFUR DIOXIDE                INSTRUMENTAL             CONDUCTOMETRIC           U-GMS/M3 (0DEG C
424011307000A20126200000007000100000SULFUR DIOXIDE                INSTRUMENTAL             CONDUCTOMETRIC           PARTS PER MILLIO
424011308001\00100026200008000100000SULFUR DIOXIDE                INSTRUMENTAL             CONDUCTOMETRIC           PARTS PER BILLIO
424011401026B10100010000001000100000SULFUR DIOXIDE                INSTRUMENTAL             COULOMETRIC              U-GMS/M3 (25DEG
424011402028F10100009162002000100000SULFUR DIOXIDE                INSTRUMENTAL             COULOMETRIC              U-GMS/M3 (0DEG C
424011407000A20126200000007000100000SULFUR DIOXIDE                INSTRUMENTAL             COULOMETRIC              PARTS PER MILLIO
424011408001\00100026200008000100000SULFUR DIOXIDE                INSTRUMENTAL             COULOMETRIC              PARTS PER BILLIO
424011601026B10100010000001000100000SULFUR DIOXIDE                INSTRUMENTAL             FLAME PHOTOMETRIC        U-GMS/M3 (25DEG
424011707000D20126200000007000100000SULFUR DIOXIDE                INSTRUMENTAL             POLAROGRAPHIC DYNA SCIENCPARTS PER MILLIO
424013101026B10100010000001000100000SULFUR DIOXIDE                DAVIS INSTRUMENT         HYDROGEN PEROXIDE        U-GMS/M3 (25DEG
424013302028F10100009160002000100000SULFUR DIOXIDE                DAVIS INSTRUMENT         SEQUENTIAL-CONDUCTOMETRICU-GMS/M3 (0DEG C
424019101000E00100010000001000100000SULFUR DIOXIDE                GAS BUBBLER              PARAROSANILINE-SULFAMIC  U-GMS/M3 (25 DEG
424019107001140126200000007000100000SULFUR DIOXIDE                GAS BUBBLER              PARAROSANILINE-SULFAMIC  PARTS PER MILLIO
424019401000E00100010000001000100000SULFUR DIOXIDE                GAS BUBBLER              HYDROGEN PEROXIDE        U-GMS/M3 (25DEG
426011407000A20112300000007000100000NITRIC OXIDE                  INSTRUMENTAL             CHEIMLUMINESCENCE        PARTS PER MILLIO
426021101018H10100010000001000100000NITROGEN DIOXIDE              INSTRUMENTAL             COLORIMETRIC-LYSHKOW     U-GMS/M3 (25DEG
426021102020E10100009160002000100000NITROGEN DIOXIDE              INSTRUMENTAL             COLORIMETRIC-LYSHKOW     U-GMS/M3 (0DEG C
426021107000A20118800000007000100000NITROGEN DIOXIDE              INSTRUMENTAL             COLORIMETRIC-GREISS-SALTZPARTS PER MILLIO
426021108001\00100018800008000100000NITROGEN DIOXIDE              INSTRUMENTAL             COLORIMETRIC-GREISS-SALTZPARTS PER BILLIO
426021201018H10100010000001000100000NITROGEN DIOXIDE              INSTRUMENTAL             COLORIMETRIC-GREISS-SALTZU-GMS/M3 (25DEG
426021207000A20118800000007000100000NITROGEN DIOXIDE              INSTRUMENTAL             COLORIMETRIC-GREISS-SALTZPARTS PER MILLIO
426021302020E10100009160002000100000NITROGEN DIOXIDE              INSTRUMENTAL             COULOMETRIC -GREISS-SALTZU-GMS/M3 (0DEG C
426021407000A20118800000007000100000NITROGEN DIOXIDE              INSTRUMENTAL             CHEMILUMINESCENCE        PARTS PER MILLIO
426021408001\00100018800008000100000NITROGEN DIOXIDE              INSTRUMENTAL             CHEMILUMINESCENCE        PARTS PER BILLIO
426021501075H10100010000001000100000NITROGEN DIOXIDE              INSTRUMENTAL             POLAROGRAPHIC DYNA SCIENCU-GMS/M3 (25DEG
426028207002G40118800000008100000000NITROGEN DIOXIDE              GAS BUBBLER              SALTZMAN(100ML TU+ORIFIC)PARTS PER MILLIO
426028401000E00100010000001000100000NITROGEN DIOXIDE              GAS BUBBLER              NASN SODIUM ARSENITE     U-GMS/M3 (25DEG
426028402005E10100009160002000100000NITROGEN DIOXIDE              GAS BUBBLER              NASN SODIUM ARSENITE     U-GMS/M3 (25DEG
426029402005E10100009160002000100000NITROGEN DIOXIDE              GAS BUBBLER              NASN SODIUM ARSENITE     U-GMS/M3 (0DEG C
426029501000E00100010000001000100000NITROGEN DIOXIDE              GAS BUBBLER              TEA METHOD               U-GMS/M3 (25DEG
426029602005E10100009160002000100000NITROGEN DIOXIDE              GAS BUBBLER              TGS METHOD               U-GMS/M3 (0DEG C
426031107000A20118800000007000100000OXIDES OF NITROGEN            INSTRUMENTAL             COLORIMETRIC             PARTS PER MILLIO
426031108001\00100018800008000100000OXIDES OF NITROGEN            INSTRUMENTAL             COLORIMETRIC             PARTS PER BILLIO
426031307000A20118800000007000100000OXIDES OF NITROGEN            INSTRUMENTAL             COLORIMETRIC             PARTS PER MILLIO
426031407000A20118800000008100000000OXIDES OF NITROGEN            INSTRUMENTAL             CHEMILUMINESCENCE        PARTS PER MILLIO
426039901000E00100010000001000100000OXIDES OF NITROGEN            GAS BUBBLER              SALTZMAN METHOD          U-GMS/M3 (25DEG
426039907002G40118800000007000100000OXIDES OF NITROGEN            GAS BUBBLER              SALTZMAN METHOD          PARTS PER MILLIO
431011101013C00100010000001000100000TOTAL HYDROCARBONS            INSTRUMENTAL             FLAME IONIZATION         U-GMS/M3 (25DEG
```

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Figure AQT14-2 - continued. Procedure AQEMP10 -- program AEMPARM

## AQDHS-II TEST 15

### Update the Site File

In this test run, the AQDHS-II site file is updated using the cataloged procedure AQEMS10 which executes ASRSITE (AQ0160), the site file transaction sort program, and AEMSITE (AQ0080), the site file maintenance program.

The programs used in this test run were used in Test 2 to create the initial site file. For a description of ASRSITE (AQ0160) and AEMSITE (AQ0080) refer to Test 2.

The run stream for this test run contains the JCL necessary for updating an AQDHS-II site file. This run stream is shown in Figure AQT15-1.

The cataloged procedure executed by this run stream is AQEMS10. For the SORT step, the user must supply the DD (data definition) information for the input AQDHS-II site transaction file. Substitutable parameters are used to specify AQSITE01 (created and stored on disk in Test 2) as the input site file and AQSITE02 as the new (or updated) site file. The option card used in the EDIT step contains only one user specification; 'LIST' is coded on the card to generate listings of the input transactions, input site file, and output site file. The default values for the other options are 'NOFLAGW' (warning message suppression) and 55 lines per page maximum. Refer to Figure AQT15-2 for the sample output produced by this procedure.

```
//EPALMH15 JOB (A087,MLMH,,LMH,,1,35),TIME=3,PRTY=4,MSGLEVEL=(1,1)
//*
//* UPDATE THE SITE FILE, AQSITE01
//*
//TEST15A EXEC AQEMS10,
//             OLDSITE=AQSITE01,
//             NEWSITE=AQSITE02,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* PRESORT THE SITE TRANSACTIONS, THEN UPDATE THE FILE WITH THEM
//*
//SORT.INPUT DD *
010500300A081111111122222NAQMA01SMSAPOISUN COLLECTION AGENCY                  01A
010010011X02                                                                  01D
010010011X08                                                                  01D
010010021Z10                                                                  01D
010020011X08                                                                  01D
010400300A08       XXXXX* *          *                                        01C
011100200A08                 SE                                               02C
011100200A081010501    020179                          1321101    020179      11C
011111201A01       FFF11                                                      01C
011111201A01                         UNIVERSITY OF ALABAMA                    01C
011111201A01VICTORY LINER                                                     04C
011100200A082                                                                 01D
011100200A082010001               1320001              7707701                11D
011100200A08 XXXXXX                                                           05C
011100200A08GEORGE PAULSON                                                    07C
011111201A0106112100102232101*                                                02C
011111201A01*                         X                                       06C
011111201A011310122**   *     *                                               11C
013456789A12                                                                  01D
100001001E02                                                                  01D
120001001C01                                                                  01D
120012220A11NX10179YY       **                                                05C
160012220B111410111    0002230101                                             11C
181122112A01                                                                  02D
/*
//UPDATE.OPTIONS DD *
  LIST
```

Figure AQT15-1. Run Stream

```
                              AQDHS-II SITE FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                              PAGE  1

PROGRAM NAME: ASRSITE (AQ0160)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:          24
NUMBER OF OUTPUT TRANSACTIONS:         24
```

(page 1 of 5)

Figure AQT15-2.  Procedure AQEMS10 -- program ASRSITE

```
                                        AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                                   DIAGNOSTIC REPORT                                                        PAGE    1

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT:   LIST  (USER SPECIFIED), NOFLAGW  (DEFAULT),        55 LINES PER PAGE (DEFAULT)

          ***AEMSITE 087 CONDITIONAL - MISSING OR INVALID FLAGW OPTION - NOFLAGW USE
          ***AEMSITE 088 CONDITIONAL - MISSING OR INVALID MAXIMUM LINE SPECIFICATION - 55 LINES USED

010400300A08        XXXXX* *          *                                 01C
          ***AEMSITE 008 ERROR - COLUMN 20 - INVALID FIPS CODE - DATA REJECTED
          ***AEMSITE 077 ERROR - TRANSACTION HAS NO MATCH ON SITE FILE - CARD REJECTED

011100200A082                                                               01D
          ***AEMSITE 070 ERROR - COLUMNS 13 THRU 77 OF TYPE 01 DELETE CARD MUST BE BLANK - CARD REJECTED

011100200A082010001            1320001            7707701                   11D
          ***AEMSITE 072 ERROR - COLUMN 13 - PARM KEY HAS NO MATCH ON EXISTING RECORD - DELETE/CHANGE IGNORED
          ***AEMSITE 072 ERROR - COLUMN 34 - PARM KEY HAS NO MATCH ON EXISTING RECORD - DELETE/CHANGE IGNORED
          ***AEMSITE 072 ERROR - COLUMN 55 - PARM KEY HAS NO MATCH ON EXISTING RECORD - DELETE/CHANGE IGNORED

011100200A08 XXXXXX                                                         05C
          ***AEMSITE 055 ERROR - COLUMN 14 - DATE SITING CRITERIA WILL BE MET INVALID - COLS 13-19 REJECTED

011111201A01        FFF11                                                   01C
          ***AEMSITE 008 ERROR - COLUMN 20 - INVALID FIPS CODE - DATA REJECTED

011111201A0106112100102232101*                                              02C
          ***AEMSITE 018 CONDITIONAL - COLUMN 15 - UTM ZONE OUT OF RANGE - DATA ACCEPTED
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED
          ***AEMSITE 022 CONDITIONAL - COLUMN 23 - UTM NORTHING COORDINATE OUT OF RANGE - DATA ACCEPTED
          ***AEMSITE 024 ERROR - COLUMN 30 - SECTOR MUST BE DEFINED WHEN UTM IS USED

011111201A011310122**  *     *                                              11C
          ***AEMSITE 072 ERROR - COLUMN 13 - PARM KEY HAS NO MATCH ON EXISTING RECORD - DELETE/CHANGE IGNORED


NUMBER OF INPUT TRANSACTIONS:            24
NUMBER OF INPUT SITE FILE RECORDS:       59
NUMBER OF OUTPUT SITE FILE RECORDS:      54
NUMBER OF SITES CHANGED:                  4
NUMBER OF SITES ADDED:                    1
NUMBER OF SITES DELETED:                  6
NUMBER OF WARNING MESSAGES:               2
NUMBER OF CONDITIONAL MESSAGES:           5
NUMBER OF ERROR MESSAGES:                14
NUMBER OF ABORT MESSAGES:                 0
NUMBER OF DISASTER MESSAGES:              0

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(page 2 of 5)

Figure AQT15-2 - continued.  Procedure AQEMS10 -- program AEMSITE

```
                                       AUDMS-II SITE FILE MAINTENANCE PROGRAM
                                                   OLD SITE FILE                                                        PAGE     1

010010011X02111222011234XAQAQAQSMSA                                                        ENGINERING SCIENCES
010010011X08111222011234XAQAQAQSMSA                                                        ENGINERING SCIFNCES
010010021A10121200023221XAQMA01SMSA                                                         TENNESSEE VALLEY AUTHORITY, HUNTSVI
010010021Z10121200023221XAQMA01SMSA                                                        HONEYWELL
010020011X08111222011234XAQAQAQSMSA                                                        ENGINERING SCIENCES
010600300A08111111122222NAQMA01SMSA                                                        UNION SCIENCES
010700300A08111111122222NAQMA01SMSA                                                        ATOMIC FUELS INC.
011100200A08004198022333A002110SSSS163800000003542500             401                      COUNTY HEALTH DEPARTMENT
011111201A01004198022222AAQMA01SM/1                                001                      CENTRAL ALABAMA UNIVERSITY
100001001E02049108011111NAQMA00SMSA                                                        NORTH 10TH AVENUE
120001001C01060008011111NAQMA00SMSA04220000008000000                                       MOUNTAIN ROAD, HILO, HAWAII CO.
120001002C01060014011111NAQMA00SMSA                                                        PEARL HARBOR, HONOLULU, HONOLULU CO.
120001003C01060014011111NAQMA00SMSA                                                        WAIKIKI, HONOLULU, HONOLULU CO.
120001004C01060014011111NAQMA00SMSA                                                        SCHOFIELD BARRACKS, HONOLULU CO.
120001005C01060014011111NAQMA00SMSA                                                        PEARL CITY, HONOLULU CO.
120001006C01060014011111NAQMA00SMSA                                                        WAHIAWA, HONOLULU CO.
120001007C01060014011111NAQMA00SMSA                                                        KANEOHE, HONOLULU CO.
120001008C01060014011111NAQMA00SMSA                                                        KAILUA, HONOLULU CO.
120012220A11121451020241NAQMA  SMSA                                                        EPA DATA BANK
150012220A011001120                                                                         PENTAGON,WASHINGTON,D.C.
152440080D05077422012345ABCDEFG2440160045000004200000W0872900N375800                       ANGEL MOUNDS STATE MEMORIAL
154520022C05076136012345ABCDEFG4520160062000004250000W0854700N381500                       U.S.HWY 150 & STATE HWY 111
160012220B11066402001002XAQMA  SMSA                                                        2 RIVERS SITE
200001004B03108004511111NAQMA00SMSA                                                        GLACIER DRIVE
210001004B05111222200111N110001SSSS                                                        HARBOR TUNNEL
232640075A021221700123456BCDEFH2610160027500004771000W0834400N430700008                    BENJAMIN RUN
284360008B05145152012345ABCDEFG4360140069000004526000W0965000N405200                       LINCOLN AFB
340001001A06169096011111NAQMA00SMSA                                                        YADKIN ROAD
340001002A06166212011111NAQMA00SMSA                                                        HIGHWAY 301 BUS., JOHNSTON CO.
340001003A06171048011111NAQMA00SMSA                                                        BILTMORE ESTATES, ASHEVILLE, BUNCOMB
340001004A06170298011111NAQMA00SMSA                                                        GUM BRANCH ROAD, ONSLOW COUNTY
340002001D05170288011111NAQMA00SMSA                                                        WRIGHTSVILLE BEACH, NEW HANOVER CO.
340002003D05168102011111NAQMA00SMSA                                                        ROANOKE ISLAND, MANTEO, DARE CO.
340002005D05167258011111NAQMA00SMSA                                                        TRYON RD., CHARLOTTE, MECKLENBURG CO
340002007D05136148011111NAQMA00SMSA                                                        CHERRY ST., WINSTON-SALEM, FORSYTH C
340003002G04136178011111NAQMA00SMSA                                                        REIDSVILLE HIGHWAY
340003004G04166416011111NAQMA00SMSA                                                        DOWNTOWN BLVD., RALEIGH, WAKE CO.
340003006G04170114011111NAQMA00SMSA                                                        COURTHOUSE, KENANSVILLE, DUPLIN COUN
340003008G04167236011111NAQMA00SMSA                                                        HWY. 321 N., LINCOLNTON, LINCOLN CO.
340003010G04165350011111NAQMA00SMSA                                                        CHIMNEY ROCK, LAKE LURE, RUTHERFORD
352520001A07130022012345ABCDFFG2520140066800051900000W0964700N465000                       TELEVISION TOWER
369320011D01178670012345ABCDEFG932017005200004565000W0804500N411500                        TRUMBULL COUNTY HOSPITAL
370001234F05184060011111NAQMA00SMSA                                                        MCALISTER ROAD
372240999A05186302011111NAQMA00SMSA                                                        LIBERTY MOUNDS, TULSA, TULSA CO.
372260993A05186302011111NAQMA00SMSA                                                        WYNONA, TULSA, TULSA CO.
372260995A05186302011111NAQMA00SMSA                                                        SKIATOOK LAKE
373000001A05186302011111NAQMA00SMSA                                                        TULSA INTERNATIONAL AIRPORT, TULSA,
373000110G01186302011111NAQMA00SMSA                                                        TULSA PUBLIC HEALTH, TULSA, TULSA CO
373000127F02186302011111NAQMA00SMSA                                                        MOHAWK BLVD, TULSA, TULSA CO.
373000132F02186302011111NAQMA00SMSA                                                        APACHE ST., TULSA, TULSA CO.
373000997A05186302011111NAQMA00SMSA                                                        TULSA PUBLIC HEALTH
373000998A05186302011111NAQMA00SMSA                                                        TULSA POST OFFICE
373020996A05186302011111NAQMA00SMSA                                                        SPERRY MANUFACTURING, INC.
373140992A05186302011111NAQMA00SMSA                                                        OCHELATA, TULSA, TULSA CO.
373140994A05186302011111NAQMA00SMSA                                                        VERA POST OFFICE
443840014D01207172012345ABCDEFG384017002500003987000W0835000N360200                        HWY 70 AT HOSSTON RIVER BRIDGE
501480019A01234076012345ABCDEFG1480170044500004245000W0814300N382200                       I-64 BRIDGE
520043330Z11242042001010NAQMA01SMSA                                                        MOUNTAIN GLADE DRIVE
551000200A01111111101010NAQMA01SMSA                                                        PURE WATER BEACH

NUMBER OF INPUT SITE FILE RECORDS:          59
```

(page 3 of 5)

Figure AQT15-2 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                            AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                                   INPUT TRANSACTIONS                                              PAGE      1

010010011X02                                                                 01D
010010011X08                                                                 01D
010010021Z10                                                                 01D
010020011X08                                                                 01D
010400300A08       XXXXX* *          *                                       01C                    *** CARD REJECTED
010500300A08111111122222NAQMA01SMSAPOISON COLLECTION AGENCY                  01A
011100200A082                                                                01D                    *** CARD REJECTED
011100200A082010001             1320001               7707701                11D                    *** PARM REJECTED
011100200A08                SE                                               02C
011100200A08 XXXXXX                                                          05C                    *** DATA REJECTED
011100200A08GEORGE PAULSON                                                   07C
011100200A081010501    020179                        1321101    020179       11C
011111201A01         FFF11                                                   01C                    *** DATA REJECTED
011111201A01                       UNIVERSITY OF ALABAMA                     01C
011111201A0106112100102232101*                                               02C                    *** DATA REJECTED
011111201A01VICTORY LINER                                                    04C
011111201A01*                       X                                        06C
011111201A011310122**  *     *                                               11C                    *** PARM REJECTED
013456789A12                                                                 01D                    *** CARD REJECTED
100001001E02                                                                 01D
120001001C01                                                                 01D
120012220A11NX10179YY      **                                                05C                    *** DATA REJECTED
160012220B111410111    0002230101                                            11C                    *** DATA REJECTED
181122112A01                                                                 02D                    *** CARD REJECTED

NUMBER OF INPUT TRANSACTIONS:              24
```

(page 4 of 5)

Figure AQT15-2 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                   AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                             UPDATED SITE FILE                                                        PAGE     1

010010021A1012120002322IXAQMA01SMSA                                                            TENNESSEE VALLEY AUTHORITY, HUNTSVI
010500300A0811111111222222NAQMA01SMSA                                                           POISON COLLECTION AGENCY
010600300A0811111111222222NAQMA01SMSA                                                           UNION SCIENCES
010700300A0811111111222222NAQMA01SMSA                                                           ATOMIC FUELS INC.
011100200A08004198022333A002110SSSS16380000003542500                    401                   COUNTY HEALTH DEPARTMENT
011111201A01004198022222AAQMA01SM/106112100102232101                     001                    UNIVERSITY OF ALABAMA
120001002C01060014011111NAQMA00SMSA                                                            PEARL HARBOR, HONOLULU, HONOLULU CO.
120001003C01060014011111NAQMA00SMSA                                                            WAIKIKI, HONOLULU, HONOLULU CO.
120001004C01060014011111NAQMA00SMSA                                                            SCHOFIELD BARRACKS, HONOLULU CO.
120001005C01060014011111NAQMA00SMSA                                                            PEARL CITY, HONOLULU CO.
120001006C01060014011111NAQMA00SMSA                                                            WAHIAWA, HONOLULU CO.
120001007C01060014011111NAQMA00SMSA                                                            KANEOHE, HONOLULU CO.
120001008C01060014011111NAQMA00SMSA                                                            KAILUA, HONOLULU CO.
120012220A11121451020241NAQMA  SMSA                                                            EPA DATA BANK
150012220A011001120                                                                             PENTAGON,WASHINGTON,D.C.
152480080D05077422012345ABCDEFG244016004500004200000W0872900N375800                            ANGEL MOUNDS STATE MEMORIAL
154520022C05076136012345ABCDEFG452016006200004250000W0854700N381500                            U.S.HWY 150 & STATE HWY 111
160012220B11066402001002XAQMA  SMSA                                                            2 RIVERS SITE
200001004B03108004511111NAQMA00SMSA                                                            GLACIER DRIVE
210001004B05111222200111N110001SSSS                                                            HARBOR TUNNEL
232640075A021221700123456BCDEFH261016002750004771000W0834400N430700008                         BENJAMIN RUN
284360008B05145152012345ABCDEFG436014006900004526000W0965000N405200                            LINCOLN AFB
340001001A06169096011111NAQMA00SMSA                                                            YADKIN ROAD
340001002A06166212011111NAQMA00SMSA                                                            HIGHWAY 301 BUS., JOHNSTON CO.
340001003A06171048011111NAQMA00SMSA                                                            BILTMORE ESTATES, ASHEVILLE, BUNCOMB
340001004A06170298011111NAQMA00SMSA                                                            GUM BRANCH ROAD, ONSLOW COUNTY
340002001D05170288011111NAQMA00SMSA                                                            WRIGHTSVILLE BEACH, NEW HANOVER CO.
340002003D05168102011111NAQMA00SMSA                                                            ROANOKE ISLAND, MANTEO, DARE CO.
340002005D05167258011111NAQMA00SMSA                                                            TRYON RD., CHARLOTTE, MECKLENBURG CO
340002007D05136148011111NAQMA00SMSA                                                            CHERRY ST., WINSTON-SALEM, FORSYTH C
340003002G04136178011111NAQMA00SMSA                                                            REIDSVILLE HIGHWAY
340003004G04166416011111NAQMA00SMSA                                                            DOWNTOWN BLVD., RALEIGH, WAKE CO.
340003006G04170114011111NAQMA00SMSA                                                            COURTHOUSE, KENANSVILLE, DUPLIN COUN
340003008G04167236011111NAQMA00SMSA                                                            HWY. 321 N., LINCOLNTON, LINCOLN CO.
340003010G04165350011111NAQMA00SMSA                                                            CHIMNEY ROCK, LAKE LURE, RUTHERFORD
352520001A07130022012345ABCDEFG252014006680005190000W0964700N465000                            TELEVISION TOWER
369320011D01178670012345ABCDEFG932017005200004565000W0804500N411500                            TRUMBULL COUNTY HOSPITAL
370001234F05184060011111NAQMA00SMSA                                                            MCALISTER ROAD
372240999A05186302011111NAQMA00SMSA                                                            LIBERTY MOUNDS, TULSA, TULSA CO.
372260993A05186302011111NAQMA00SMSA                                                            WYNONA, TULSA, TULSA CO.
372260995A05186302011111NAQMA00SMSA                                                            SKIATOOK LAKE
373000001A05186302011111NAQMA00SMSA                                                            TULSA INTERNATIONAL AIRPORT, TULSA,
373000110G01186302011111NAQMA00SMSA                                                            TULSA PUBLIC HEALTH, TULSA, TULSA CO
373000127F02186302011111NAQMA00SMSA                                                            MOHAWK BLVD, TULSA, TULSA CO.
373000132F02186302011111NAQMA00SMSA                                                            APACHE ST., TULSA, TULSA CO.
373000997A05186302011111NAQMA00SMSA                                                            TULSA PUBLIC HEALTH
373000998A05186302011111NAQMA00SMSA                                                            TULSA POST OFFICE
373020996A05186302011111NAQMA00SMSA                                                            SPERRY MANUFACTURING, INC.
373140992A05186302011111NAQMA00SMSA                                                            OCHELATA, TULSA, TULSA CO.
373140994A05186302011111NAQMA00SMSA                                                            VERA POST OFFICE
443840014D01207172012345ABCDEFG384017002500003987000W0835000N360200                            HWY 70 AT HUSSTON RIVER BRIDGE
501480019A01234076012345ABCDEFG148017004450004245000W0814300N382200                            I-64 BRIDGE
520043330Z11242042001010NAQMA01SMSA                                                            MOUNTAIN GLADE DRIVE
551000200A011111111101010NAQMA01SMSA                                                           PURE WATER BEACH

NUMBER OF OUTPUT SITE FILE RECORDS:        54
```

(page 5 of 5)

Figure AQT15-2 - continued. Procedure AQEMS10 -- program AEMSITE

## AQDHS-II TEST 16

## Produce a Parameter Exception Report for the Updated Parameter File

In this test run, a parameter exception report is generated for the updated parameter file using the cataloged procedure AQRPP20. This procedure executes ARPPMEX (AQ0330), the parameter exception report program.

ARPPMEX (AQ0330) is designed to give an exception report of the parameter, method, and unit code combinations which are found in the AQDHS-II master file but not in the parameter file.

For each combination not found in the parameter file, ARPPMEX (AQ0330) creates a set of three skeleton parameter file transactions which may be used in adding these exceptions to the parameter file. Note that before these transactions can be used to update the parameter file the appropriate information must be added to the following fields: (1) the minimum detectable, (2) the minimum detectable decimal code, (3) the parameter description, (4) the collection method, (5) the analysis method, (6) the units description, (7) the standard units code, and (8) the standard units conversion factor. It may also be desirable to add (9) the user units code and (10) the user units conversion factor. See Figure AQT1-1 for the parameter file transaction formats.

The parameter exception report lists the parameter, method, and unit code combinations which were missing from the parameter file or simply indicates that none were missing.

The run stream for this test run contains the JCL necessary for producing a parameter exceptions report for the updated parameter file. This run stream is shown in Figure AQT16-1.

The cataloged procedure executed by this run stream is AQRPP20. Through the use of substitutable parameters, the input master file is specified as AQMST01T (created and stored on disk in Test 12), and the input parameter file is specified as AQPARM02 (created and stored on disk in Test 14). In this test run, the skeleton transaction file is printed for verification purposes.

However, the user will typically write this file to cards or disk in order to more easily add information to the transactions. The cataloged procedure AQRPP20 is designed to write the file to disk, so in order to write the file to cards the user must supply the appropriate DD (data definition) information for the skeleton transaction file in the COMPARE step. Refer to Figure AQT16-2 for the sample output produced by this procedure.

```
//AQSTST16  JOB  RTI.C44.P02443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.P02069.MCMASTER.DPR.JCL
//*
//* PRODUCE A PARAMETER EXCEPTIONS REPORT FOR THE UPDATED
//* PARAMETER FILE, AQPARM02
//*
//TEST16A EXEC AQRPP20,
//             MSTRFIL=AQMST01T,
//             PARMFIL=AQPARM02
//*
//* MATCH THE PARAMETER KEYS ON THE PARAMETER FILE
//* WITH THOSE ON THE LATEST MASTER FILE, AQMST01T,
//* TO FIND ANY OUTSTANDING PARAMETER KEYS ON THE PARAMETER FILE;
//* GENERATE SKELETON TRANSACTIONS FOR THESE PARAMETER KEYS
//* (PRINTED IN THIS RUN)
//*
//COMPARE.AQSTRANS DD SYSOUT=A
```

Figure AQT16-1.  Run Stream

```
                          AQDHS-II PARAMETER EXCEPTION REPORT PROGRAM  -  DIAGNOSTIC REPORT                 PAGE   1

  PROGRAM NAME: ARPPMEX (AQ0330)
  REVISION LEVEL: 1-00
  LAST UPDATE #: 24
  INCORPORATED: OCTOBER 31, 1978


  NUMBER OF MASTER RECORDS READ:                      330
  NUMBER OF PARM FILE RECORDS READ:                    89
  NUMBER OF PARAMETER EXCEPTIONS:                       1
  NUMBER OF PARM FILE TRANSACTIONS CREATED:             3


 -----------------------------------------------------------------------------------------------------------------


                                          AQDHS-II PARAMETER EXCEPTION REPORT                                 PAGE   1
                                 LIST OF PARAMETERS MISSING FROM AQDHS-II PARAMETER FILE

 PARAMETER CODE       METHOD CODE       UNIT CODE
     61202                21               28



 -----------------------------------------------------------------------------------------------------------------



 1612022128                                                 A
 2612022128                                                 A
 3612022128                                                 A
```

Figure AQT16-2.  Procedure AQRPP20 -- program ARPPMEX

## AQDHS-II TEST 17

## Produce a Site Exception Report for the Updated Site File

In this test run, a site exception report is generated for the updated site file using the cataloged procedure AQRPS20. This procedure executes ARPSMEX (AQ0340), the site exception report program.

ARPSMEX (AQ0340) is designed to give an exception report of the sites (i.e., state, area, site, agency, and project codes) which are found in the AQDHS-II master file but not in the AQDHS-II site file.

The option in this program is used to specify the maximum number of lines per printed page. The number of lines must be coded in card columns 1 and 2 of the option card. If no option card is entered, or an invalid line count is specified, a default of 62 lines per page is assumed.

The site exception report lists the sites which were missing from the site file or simply indicates that none were missing.

For those sites not found in the site file, ARPSMEX (AQ0340) creates skeleton site file transactions (with card type 01, the only required card) which may be used in adding these exceptions to the site file. Note that before these transactions can be used to update the site file the appropriate information must be added to the following fields: (1) the AQCR code, (2) the county code, (3) the FIPS code, (4) the SLAMS-ID, (5) the NAQTS ID, (6) the AQMA, (7) the SMSA, and (8) the site address. The optional cards, card type 02 through card type 11, are not in the skeleton site file transactions; the user may prepare these and enter them with the card type 01 transactions. See Figure AQT2-1 for the format of site file transactions.

The run stream for this test run contains the JCL necessary for producing a site exceptions report for the updated site file. This run stream is shown in Figure AQT17-1.

The cataloged procedure executed by this run stream is AQRPS20. Through the use of substitutable parameters, the input master file is specified as AQMST01T (created and stored on disk in Test 12), and the input site file is specified as AQSITE02 (created and stored on disk in Test 15). The user must supply the DD (data definition) information for the option card file. The lines per page option specified in the EXCPRP step of this test run is 62. In this test run, the skeleton transaction file is printed for verification purposes. However, the user will typically write this file to cards or disk in order to more easily add information to the transactions. The cataloged procedure AQRPS20 is designed to write the file to disk, so in order to write the file to cards the user must supply the appropriate DD information for the skeleton transaction file in the EXCPRP step. Refer to Figure AQT17-2 for the sample output produced by this procedure.

```
//AQSTST17  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.UPR.JCL
//*
//* PRODUCE A SITE EXCEPTIONS REPORT FOR THE
//* UPDATED SITE FILE, AQSITE02
//*
//TEST17A EXEC AQRPS20,
//             MSTRFIL=AQMST01T,
//             SITEFIL=AQSITE02
//*
//* MATCH THE SITE KEYS ON THE SITE FILE WITH THOSE ON
//* THE LATEST MASTER FILE, AQMST01T,
//* TO FIND ANY OUTSTANDING SITE KEYS ON THE SITE FILE;
//* GENERATE SKELETON TRANSACTIONS FOR THESE SITES (PRINTED IN THIS RUN)
//*
//EXCPRP.AQSTRANS DD SYSOUT=A
//EXCPRP.OPTIONS DD *
62
/*
```

Figure AQT17-1. Run Stream

```
                  AQDHS-II SITE EXCEPTION REPORT PROGRAM  -  DIAGNOSTIC REPORT                              PAGE   1

PROGRAM NAME: ARPSMEX (AQ0340)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: 62 LINES PER PAGE


NUMBER OF MASTER FILE RECORDS:                    339
NUMBER OF SITE FILE RECORDS:                       59
NUMBER OF MISSING SITES PRINTED IN REPORT:          1
NUMBER OF SKELETON TRANSACTIONS GENERATED:          1



------------------------------------------------------------------------------------------------------------------


                                  AQDHS-II SITE EXCEPTION REPORT                                              PAGE   1
                              LIST OF SITES MISSING FROM AQDHS-II SITE FILE


                   STATE CODE         AREA CODE         SITE CODE         AGENCY         PROJECT

                       10                0001              001              E               02



------------------------------------------------------------------------------------------------------------------


100001001E020491080                                                       01A
```

Figure AQT17-2. Procedure AQRPS20 -- program ARPSMEX

## AQDHS-II TEST 18

## Produce a FORTRAN-Compatible Master File and a FORTRAN-Compatible Parameter File

In this test run, a FORTRAN-compatible master file is produced using the cataloged procedure AQCVM10 which executes ACVMFOR (AQ0020), the master file COBOL to FORTRAN format conversion program. The cataloged procedure AQCVP10 is then used to produce a FORTRAN-compatible parameter file by executing ACVPFOR (AQ0030), the parameter file COBOL to FORTRAN format conversion program.

ACVMFOR (AQ0020) generates a FORTRAN-compatible file containing the data from an AQDHS-II master file (or answer file). The file produced by ACVMFOR (AQ0020) is not used by any AQDHS-II program. This program is provided for the user who has ANS FORTRAN programs which use data from the AQDHS-II master file.

This FORTRAN-compatible file contains a greater number of physical records than the input master file because each input master file record is split into one to four output records. This splitting is required because an AQDHS-II master file consists of variable-length records which store a maximum of 31 readings, whereas, the FORTRAN-compatible master file consists of fixed-length records which store up to ten readings. All readings from an AQDHS-II master file record are stored in a set of FORTRAN-compatible records which have the same key fields and are sequenced by a record sequence field. Additionally, a header record and a trailer record are attached to the beginning and end of the converted file, respectively.

ACVPFOR (AQ0030) generates a FORTRAN-compatible file containing the data from an AQDHS-II parameter file. The file produced by ACVPFOR (AQ0030) is not used by any AQDHS-II program. This program is designed for the user who has ANS FORTRAN programs which use data from the AQDHS-II parameter file.

The data fields on a converted record are the same as in the input parameter file record with the exception of the 'minimum detectable' data field. In the COBOL parameter file, the minimum detectable is represented as a signed four-digit number, and the decimal position for this number is indicated in a separate data field. When the file is converted to the FORTRAN-compatible format, the minimum detectable is represented by a ten-character field containing the sign ('-' if negative, blank if positive), the decimal point, and the actual numeric value. Also, the FORTRAN-compatible file will have a header record at the beginning of the file and a trailer record at the end.

The run stream for this test run contains the JCL necessary for producing a FORTRAN-compatible master file and a FORTRAN-compatible parameter file. This run stream is shown in Figure AQT18-1.

First, the run stream executes the cataloged procedure AQCVM10. Through the use of substitutable parameters, the input master file is specified as AQMST01T (created and stored on disk in Test 12), and the FORTRAN-compatible master file is named AQMSTF01. Refer to Figure AQT18-2 for the sample diagnostic output produced by this procedure.

Next, the cataloged procedure AQCVP10 is executed. Substitutable parameters are used to specify AQPARM01 (created and stored on disk in Test 1) as the input parameter file and AQPRMF01 as the FORTRAN-compatible parameter file. Figure AQT18-3 shows the sample output diagnostic produced by this procedure.

```
//AQSTST18  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQMSTF01,
// DISP=(OLD,DELETE)
//DD2 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQPRMF01,
// DISP=(OLD,DELETE)
//*
//* PRODUCE MASTER AND PARAMETER FILES THAT MAY BE
//* USED IN FORTRAN PROGRAMS
//*
//TEST18A EXEC AQCVM10,
//             MSTRFIL=AQMST01T,
//             MSTRFOR=AQMSTF01,
//             DISP='NEW,CATLG,DELETE',
//             PRIMARY=1,
//             SECNDRY=1
//*
//* CREATE A FORTRAN-COMPATIBLE MASTER FILE
//* FROM THE LATEST MASTER,AQMST01T
//*
//TEST18B EXEC AQCVP10,
//             PARMFIL=AQPARM01,
//             PARMFOR=AQPRMF01,
//             DISP='NEW,CATLG,DELETE',
//             PRIMARY=1,
//             SECNDRY=1
//*
//* CREATE A FORTRAN-COMPATIBLE FILE
//* FROM THE FILE AQPARM01
//*
```

Figure AQT18-1.  Run Stream

```
                         AQDHS-II MASTER FILE COBOL TO FORTRAN CONVERSION PROGRAM  -  DIAGNOSTIC REPORT          PAGE     1

PROGRAM NAME: ACVMFOR (AQ0020)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

NUMBER OF FILE RECORDS READ:         334
NUMBER OF FILE RECORDS WRITTEN:      711
NUMBER OF ERRORS DETECTED:             0
```

Figure AQT18-2. Procedure AQCVM10 -- program ACVMFOR

```
                    AQDMS-II PARAMETER FILE COBOL TO FORTRAN CONVERSION PROGRAM  -  DIAGNOSTIC REPORT          PAGE    1

PROGRAM NAME: ACVPFOR (AQ0030)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

NUMBER OF FILE RECORDS READ:          89
NUMBER OF FILE RECORDS WRITTEN:       91
NUMBER OF ERRORS DETECTED:             0
```

Figure AQT18-3. Procedure AQCVP10 -- program ACVPFOR

## AQDHS-II TEST 19

## Archive Data from the Master File

In this test run, data from the AQDHS-II master file is archived using the cataloged procedure AQMSM20. This procedure executes AMSARCH (AQ0215), the master file archival program.

AMSARCH (AQ0215) creates from an input AQDHS-II master file two distinct master files: a new AQDHS-II master file and an archived AQDHS-II master file. By archiving the oldest year(s) of data, the user can reduce the size of his working master files and his operating expenses as well.

The option in this program is used to specify the beginning year for records in the new master file. A master file record is selected for the new master file if the date of the record is greater than or equal to the specified year; otherwise, the record is selected for the archived file. The user must enter an option card specifying the option date. Also, the option date must appear in card columns 1 and 2 of the option card, and it must be numeric and greater than 59. If the option date is invalid, or if no option card is submitted, an error message will be printed and program execution will be terminated.

The run stream for this test run contains the JCL necessary for archiving data from the AQDHS-II master file. This run stream is shown in Figure AQT19-1.

The cataloged procedure executed by this run stream is AQMSM20. Through the use of substitutable parameters, the input master file is specified as AQMST01T (created and stored on disk in Test 12), the new master file is named AQMST02N, and the archived master file is named AQARCM01. The user must supply the DD (data definition) information for the option card file. The option specified in the ARCHIVE step of this test run is 65. Thus, all data dated prior to 1965 is archived. Figure AQT19-2 shows the sample output produced by this procedure.

```
//AQSTST19  JOB  RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQARCM01,
// DISP=(OLD,DELETE)
//DD2 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQMST02N,
// DISP=(OLD,DELETE)
//*
//* ARCHIVE THE DATA PRIOR TO 1965 ON THE LATEST MASTER FILE, AQMST01T
//*
//TEST19A EXEC AQMSM20,
//             MSTRFIL=AQMST01T,
//             NEWMSTR=AQMST02N,
//             ARCMSTR=AQARCM01,
//             PRI1=1,
//             SEC1=1,
//             PRI2=1,
//             SEC2=1
//*
//* SPLIT THE MASTER FILE INTO AN
//* ARCHIVED FILE, AQARCM01, WITH ALL DATA BEFORE 1965,
//* AND A NEW WORKING FILE, AQMST02N
//* WITH DATA 1965 - PRESENT, INCLUSIVE
//*
//ARCHIVE.OPTIONS DD *
65
/*
```

Figure AQT19-1.  Run Stream

```
                       AQDHS-II MASTER FILE ARCHIVAL PROGRAM  -  DIAGNOSTIC REPORT                        PAGE  1

PROGRAM NAME: AMSARCH (AQ0215)
REVISION LEVEL: 1-00
LAST UPDATE #:
DATE INCORPORATED: OCTOBER 31, 1978



ALL DATA PRIOR TO 1965 IS ARCHIVED



OLD MASTER COUNT:            334
NEW MASTER COUNT:            321
ARCHIVED MASTER COUNT:        13
```

Figure AQT19-2. Procedure AQMSM20 -- program AMSARCH

## AQDHS-II TEST 20

### Reproduce the Working Master File with Data in Standard Units

In this test run, the AQDHS-II master file is reproduced in standard units using the cataloged procedure AQCVM20. This procedure executes ACVUNIT (AQ0050), the units code conversion program.

ACVUNIT (AQ0050) reads each AQDHS-II master file (or answer file) record and creates a new master file record, changing the units code field to the units specified by the option card. Each data reading in the record is then converted to the new units using the conversion factor stored in the parameter file. This program allows the user to produce reports in the same units as the EPA standards or in units of his own choosing.

The options in this program are used to specify whether the master file will be reproduced in EPA standard units or in user units. The STD option denotes that the EPA standard units code will be used for each parameter and method code combination. The USER option indicates that the units specified by the user in the parameter file will be used for each parameter and method code combination. The option specified must begin in card column 1 of the option card. If the option on the option card is invalid, or if an option card is not present in the run stream, the default value of STD will be in effect.

The input AQDHS-II parameter file should contain the units code and conversion factor information for all parameter, method, and unit code combinations on the master file. Note that the input master file (or answer file) is not altered by ACVUNIT (AQ0050); a separate, converted file is produced. This converted master file contains data values converted to the specified units. The file may be out of sequence since the units code field (a sort-key field) has been changed.

The run stream for this test run contains the JCL necessary for creating an AQDHS-II master file in standard units. This run stream is shown in Figure AQT20-1.

The cataloged procedure executed by this run stream is AQCVM20. Through the use of substitutable parameters, the input master file is specified as AQMST02N (created and stored on disk in Test 19), the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), and the converted master file is named AQMST02U. The user must supply the DD (data definition) information for the option card file. The option specified in the CONV step of this test run is STD causing the readings to be reproduced in EPA standard units. Refer to Figure AQT20-2 for the sample output produced by this procedure.

```
//AQSTST20  JOB  RTI.C44.P02443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.P02069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.P02069.MCMASTER.DPR.DATA.AQMST02U,
// DISP=(OLD,DELETE)
//*
//* REPRODUCE THE WORKING MASTER FILE, AQMST02N,
//* WITH DATA IN STANDARD UNITS
//*
//TEST20A EXEC AQCVM20,
//             MSTRFIL=AQMST02N,
//             ANSWRFL=AQMST02U,
//             PARMFIL=AQPARM01,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* RUN THE UNITS CODE CONVERSION PROGRAM WITH THE STANDARD OPTION
//*
//CONV.OPTIONS DD *
STD
/*
```

Figure AQT20-1.  Run Stream

```
                                       AQDHS-II UNITS CODE CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                PAGE     1
PROGRAM NAME: ACVUNIT (AQ0050)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
INCORPORATED: MAY 1, 1980


   OPTION IS STD
                                                                                                    27.
3417028800002001005176424011401030300          READING # 01   300800.000000
        *** ACVUNIT 004 CONDITIONAL - CONVERTED DATA FIELD TOO LARGE, RESULT IS INVALID


NUMBER OF INPUT RECORDS:                             521
NUMBER OF OUTPUT RECORDS:                            521
NUMBER OF ERRORS DETECTED:                             1
NUMBER OF READINGS CONVERTED:                      4,551
NUMBER OF READINGS TOO LARGE:                          1
NUMBER OF READINGS TOO SMALL:                          0
NUMBER OF RECORDS WITH READINGS CONVERTED:           521
NUMBER OF RECORDS WITH READINGS TOO LARGE:             1
NUMBER OF RECORDS WITH READINGS TOO SMALL:             0
```

Figure AQT20-2. Procedure AQCVM20 -- program ACVUNIT

## AQDHS-II TEST 21

### Produce a Sliding Average Report for all Hourly Data Retrieved from the Master File in Standard Units

In this test run, a sliding average answer file is retrieved from the AQDHS-II master file which is in standard units using the cataloged procedure AQRTM10. This procedure executes ARTLNGP (AQ0110), the retrieval language processor program, the COBOL compiler; the linkage editor; and the generated retrieval program, ARTGENR (AQ0120). The cataloged procedure AQSTM20 is then used to calculate the values for the sliding average report by executing ASTSLAV (AQ0180), the sliding average program. Finally, the cataloged procedure AQRPM20 is used to produce the sliding average report by executing ARPMSTR (AQ0230), the master file detailed report program.

ARTLNGP (AQ0110) and ARTGENR (AQ0120) were used in Test 13 to produce a standard answer file from the AQDHS-II master file. However, in this test run, the retrieval programs are used to produce the necessary input file for the sliding average program, ASTSLAV (AQ0180). The retrieval specification cards entered into ARTLNGP (AQ0110) must specify SLIDING as the retrieval mode (refer to Test 13). The file produced by ARTGENR (AQ0120) in this case is referred to as a sliding average answer file and must not be confused with the standard answer file. For a discussion of the programs ARTLNGP (AQ0110) and ARTGENR (AQ0120), see Test 13.

ASTSLAV (AQ0180) is used to calculate values for a sliding average report. The sliding average values are computed for all the data contained in the input file. Therefore, the user should retrieve the particular data to be included in the sliding average report rather than performing sliding average calculations on the entire master file.

The file which is input to ASTSLAV (AQ0180) must be a sliding average answer file created by a retrieval in which the SLIDING mode is specified. The records in the sliding average answer file have been changed to indicate that they are sliding average records. In addition, there are extra records in the file to provide a wrap-around capability (to be used when the beginning of a year, month, or day has been retrieved).

The options in ASTSLAV (AQ0180) are used to specify the size of the sliding average interval and the percentage of readings required to calculate the sliding average value. The word AVERAGE must begin in card column 1 of the option card. Then, beginning in card column 9, the sliding average interval (a number from 2 to 31) must be specified. This number indicates the interval (or number of readings) for which the sliding average value is to be calculated. As an example, suppose the interval value is three: to calculate a sliding average value, the corresponding input reading plus the previous two input readings (a total of three) are used.

To calculate the sliding average value over an interval of length m does not require that all m readings be present in the input file. If the SAROAD option is in effect (an S is in card column 21 of the option card), 75% of the m readings are required. Whereas, if the AQDHS-II option is in effect (an A is in column 21), (m + 1)/2 readings are required. If neither option for the required number of readings is specified, or if an invalid value is entered, the default value A is assumed. Figure AQT21-1 lists, by interval number, the number of readings required for each of these options.

All records read by ASTSLAV (AQ0180) are processed for sliding average values; however, a check is made on the time code of each record to determine if the interval number specified on the option card is greater than the maximum interval size for that time code. A chart of the maximum interval size for each time code is shown in Figure AQT21-2.

The file generated by ASTSLAV (AQ0180) contains sliding average values as calculated by the program. This file is in the same format as the standard AQDHS-II master file.

The report produced by ARPMSTR (AQ0230) can either be a standard report (as in Test 6), or it can be a sliding average report. This option is determined by the type of file entered and not by the option card. Sliding average value files produced by ASTSLAV (AQ0180) are flagged as such and produce the sliding average report (as in this test); all other files produce a standard report. When a sliding average report is being produced by ARPMSTR

(AQ0230) the DISPLAY option may be used, but the SUM and MEAN options may not be used.

The run stream for this test run contains the JCL necessary to produce a sliding average report for all hourly data that has been retrieved from the master file which is in standard units. This run stream is shown in Figure AQT21-3.

First, the run stream executes the cataloged procedure AQRTM10 to retrieve a sliding average answer file. Through the use of substitutable parameters, the input master file is specified as AQMST02U (created and stored on disk in Test 20) and the output answer file is named AQSLAVRT. Remember that AQMST02U is the file which was produced by the units code conversion program, ACVUNIT (AQ0050), in Test 20 and is a reproduction of the active master file in standard units. Thus all readings in AQSLAVRT are expressed in standard units. The user must supply the appropriate DD (data definition) information for the input retrieval specification cards in the COMPILE step. In this test run, the input retrieval specification cards are used to generate a sliding average answer file containing all records with a time code of 1. Refer to Figure AQT21-4 for the sample output produced by this procedure.

Next, the run stream executes the cataloged procedure AQSTM20 which produces the sliding average values. Substitutable parameters are used in this step to indicate AQSLAVRT (created in the first procedure of this test) as the input answer file and to name the output sliding average values file AQSLDAVG. The user must supply the appropriate DD information for the option card file. In this test run, the options specified in the AVERAGE step are AVERAGE, '3', and 'A' signifying that 3 readings are to be used to calculate the sliding average value, and at least two of the readings are required for a calculation. The sample output produced by this procedure is shown in Figure AQT21-5.

Finally, the run stream executes the cataloged procedure AQRPM20 for the sliding average report. By using substitutable parameters in this step, the input master file is specified as AQSLDAVG (created in the previous procedure), the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), the input site file is specified as AQSTESRT (created and stored on disk in Test 6), and the input parameter standards file is specified as AQSTND01 (created and stored on disk in Test 3). The user must supply the DD information for the option card file. The option specified in the REPORT step of this test run is DISPLAY > 0.5. Figure AQT21-6 shows the output produced by this procedure.

| Interval | Required # of Readings | |
|---|---|---|
| | AQDHS-II Option | SAROAD Option |
| 2 | 2 | 1 |
| 3 | 2 | 2 |
| 4 | 3 | 3 |
| 5 | 3 | 3 |
| 6 | 4 | 4 |
| 7 | 4 | 5 |
| 8 | 5 | 6 |
| 9 | 5 | 6 |
| 10 | 6 | 7 |
| 11 | 6 | 8 |
| 12 | 7 | 9 |
| 13 | 7 | 9 |
| 14 | 8 | 10 |
| 15 | 8 | 11 |
| 16 | 9 | 12 |
| 17 | 9 | 12 |
| 18 | 10 | 13 |
| 19 | 10 | 14 |
| 20 | 11 | 15 |
| 21 | 11 | 15 |
| 22 | 12 | 16 |
| 23 | 12 | 17 |

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Figure AQT21-1. Required Number of Readings for Interval Size

| Interval | Required # of Readings | |
|---|---|---|
| | AQDHS-II Option | SAROAD Option |
| 24 | 13 | 18 |
| 25 | 13 | 18 |
| 26 | 14 | 19 |
| 27 | 14 | 20 |
| 28 | 15 | 21 |
| 29 | 15 | 21 |
| 30 | 15 | 22 |
| 31 | 16 | 23 |

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Figure AQT21-1 - continued. Required Number of Readings for Interval Size

| AQDHS-II Time Code | Time Interval | Maximum Interval Size |
|---|---|---|
| 1 | 1 hour | 24 |
| 2 | 2 hour | 12 |
| 3 | 3 hour | 8 |
| 4 | 4 hour | 6 |
| 5 | 6 hour | 4 |
| 6 | 8 hour | 3 |
| 7 | 12 hour | 2 |
| 8 | Daily | 28,29,30, or 31 depending on month |
| 9 | Weekly | 5 |
| A | Monthly | 12 |
| B | Quarterly | 4 |
| C | Composite | Not applicable |

Figure AQT21-2. Maximum Interval Size By Time Code

```
//EPALMH21 JOB (AU87,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* PRODUCE A SLIDING AVERAGE REPORT FOR ALL HOURLY DATA
//* RETRIEVED FROM THE MASTER FILE, AQMST02U
//*
//TEST21A EXEC AQRTM10,
//             MSTRFIL=AQMST02U,
//             ANSWRFL=AQSLAVRT,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* RUN THE RETRIEVAL PROCEDURE WITH THE
//* SLIDING OPTION SPECIFIED IN THE '$$SELECT' CONTROL CARD
//*
//COMPILE.INPUT DD *
$$SELECT                 SLIDING
TIME-CODE                 = '1'
$$END
/*
//TEST21B EXEC AQSTM20,
//             ANSRFIL=AQSLAVRT,
//             VALUFIL=AQSLDAVG,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* CREATE THE SLIDING-AVERAGE-VALUES FILE FROM
//* THE RETRIEVED FILE IN STEP A,
//* USING AN AVERAGING INTERVAL OF 3 READINGS; THE AVERAGING
//* CRITERION OPTION (COL.21) IS 'A'; THIS MEANS THAT THE AQDHS-II
//* CRITERION HOLDS (1 MORE THAN HALF OF THE READINGS IN THE AVERAGING
//* INTERVAL MUST BE PRESENT FOR THE CALCULATION TO BE MADE)
//*
//AVERAGE.OPTIONS DD *
AVERAGE 3           A
/*
//TEST21C EXEC AQRPM20,
//             MSTRFIL=AQSLDAVG,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSTESRT,
//             STANFIL=AQSTND01
//*
//* PRODUCE THE SLIDING AVERAGE REPORT
//* FROM THE SLIDING-AVERAGE-VALUES FILE IN STEP B
//* DISPLAY ONLY VALUES GREATER THAN 0.5
//*
//REPORT.OPTIONS DD *
DISPLAY > 0.5
/*
```

Figure AQT21-3. Run Stream

```
                       AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1
PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


INPUT (CONTROL CARDS):

$$SELECT                SLIDING
TIME-CODE                = '1'
$$END


NUMBER OF CONTROL CARDS READ:                    5
NUMBER OF RETRIEVAL SKELETON RECORDS READ:   1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:  1,179
NUMBER OF CONDITIONAL MESSAGES:                  0
NUMBER OF ERROR MESSAGES:                        0
NUMBER OF ABORT MESSAGES:                        0




-----------------------------------------------------------------------------------------------------------------




                           AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                       PAGE    1
PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979


NUMBER OF MASTER FILE RECORDS READ:                   521
NUMBER OF ANSWER FILE RECORDS WRITTEN:                167
NUMBER OF CONDITIONAL MESSAGES:                         0
NUMBER OF ABORT MESSAGES:                               0
```

Figure AQT21-4. Procedure AQRTM10 -- programs ARTLNGP and ARTGENR

```
                    AQDHS-II SLIDING AVERAGE PROGRAM  -  DIAGNOSTIC REPORT                         PAGE    1

PROGRAM NAME: ASTSLAV (AQ0180)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: AVERAGE 3          A


NUMBER OF SLIDING AVERAGE ANSWER RECORDS READ:          157
NUMBER OF SLIDING AVERAGE VALUE RECORDS WRITTEN:        157
NUMBER OF ERRORS DETECTED:                                0
```

Figure AQT21-5. Procedure AQSTM20 -- program ASTSLAV

```
                              AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                        PAGE     1
PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

USER-SPECIFIED OPTION: DISPLAY > 0.5


NUMBER OF OPTION STATEMENTS READ:                           1
NUMBER OF MASTER FILE RECORDS READ:                       157
NUMBER OF REPORT PAGES WRITTEN:                            24
NUMBER OF ERRORS DETECTED:                                  0






---------------------------------------------------------------------------------------------------------------------------




STATE:  OKLAHOMA (37)               AQDHS-II AIR QUALITY DATA REPORT - SLIDING AVERAGE INTERVAL =  3                PAGE    15
                                                       DISPLAY  >0.5

AQCR:    186      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE        COLLECTION METH:                              YEAR:  1974
COUNTY: 3020      PROJECT:    SPECIAL STUDIES                       ANALYSIS METHOD:                              MONTH:  AUGUST
AREA:   3000      PARAMETER:                                        SAMPLING INTERVAL: 01 HOURS                   MIN DET:    26.2
SITE:    997      UNITS:                                            SAROAD KEY:            373000997A0518         UNITS CODE: 01
TULSA PUBLIC HEALTH                           TULSA                 KEY-1: 371863020300099 7A05174 KEY-2: 431021101 KEY-3: 080200
                                             PRIMARY                                            SECONDARY
FEDERAL STANDARD      160 UG/M3 (25 C) 3 HOUR MAXIMUM, 1 PER YEAR.              160 UG/M3 (25 C) 3 HOUR MAXIMUM, 1 PER YEAR.
STATE STANDARD        150 UG/M3 (25 C) 3 HOUR MAXIMUM, 1 PER YEAR.              150 UG/M3 (25 C) 3 HOUR MAXI4UM, 1 PER YEAR.


                                                       HOUR

DAY      00        01        02        03        04        05        06        07        08        09        10        11

01
02      ***       1635      1308      1526      2180      2398      1744      1090      1308      1744      1744      1962
03      1744      2616      2834      2616      1962      1090      1526      1308      1744      1308      1308      1526
04     872.0      1526      1744      1308      1090      1090      1090     872.0     436.0     218.0     872.0      1090
05      1352     784.8     414.2     261.6     719.4      1308      1417      1351      1613      1547      1242     370.6
06      1025      1264      1744      2572      2529      2223      2027      1744      1177     479.6     436.0     479.6
07      1395     849.9     523.2     457.8     392.4     327.0     261.6     196.2     370.6     588.6     850.2     915.6
08     392.4     414.2     327.4     392.8     481.1     590.7      1310      1745      1980      1561      1343      1116

*** INDICATES SLIDING AVERAGE VALUE NOT COMPUTED DUE TO INSUFFICIENT NUMBER OF READINGS IN FILE.
BLANK INDICATES SLIDING AVERAGE VALUE DID NOT MEET DISPLAY CRITERIA OR DID NOT MEET SELECTION CRITERIA.
```

Figure AQT21-6.  Procedure AQRPM20 -- program ARPMSTR

## AQDHS-II TEST 22

## Dump the Contents of the Archived Master File

In this test run, the contents of the archived master file are dumped using the cataloged procedure AQRPM25. This procedure executes ARPDUMP (AQ0310), the master file formatted dump program.

ARPDUMP (AQ0310) produces a formatted dump of an AQDHS-II master file. Descriptions of each field within a master file record are printed to the left of the corresponding data contained in each record.

The option in this program is used to specify the number of lines per printed page. This option can be very useful to those users who are using the standard 11 x 14 inch output form and have the ability to print eight lines per inch, thus reducing the amount of paper used. The number of lines per page must be entered in card columns 1 and 2 of the option card. The default of 55 lines per page is assumed when the option is invalid or an option card is not present in the run stream.

The run stream for this test run contains the JCL necessary for dumping the contents of the archived master file. This run stream is shown in Figure AQT22-1.

The cataloged procedure executed by this run stream is AQRPM25. Through the use of a substitutable parameter, the input master file is specified as AQARCM01 (created and stored on disk in Test 19). The user must supply the DD (data definition) information for the option card file. The option specified in the DUMP step of this test run is 80 lines per page. Refer to Figure AQT22-2 for the sample output produced by this procedure.

```
//AQSTST22  JOB  RTI.C44.PU2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PU2069.MCMASTER.OPR.JCL
//*
//* DUMP THE CONTENTS OF THE ARCHIVED FILE, AQARCM01,
//* CREATED IN TEST 19
//*
//TEST22A EXEC AQRPM25,
//             MSTRFIL=AQARCM01
//*
//* RUN THE DUMP PROGRAM AGAINST THE ARCHIVED FILE,
//* WITH A LINES-PER-PAGE MAXIMUM OF 80
//*
//DUMP.OPTIONS DD *
80
/*
```

Figure AQT22-1.  Run Stream

```
                                         AGDMS-II MASTER FILE FORMATTED DUMP                                   PAGE    1
PROGRAM NAME: ARPDUMP (AQ0310)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

 OPTION OF  80  LINES PER PAGE USED
```

(Page 1 of 2)

Figure AQT22-2. Procedure AQRPM25 -- program ARPDUMP

```
                                        AQDMS-II MASTER FILE FORMATTED DUMP                                        PAGE    2
ACTION C= 2  FORM C= 2  STATE #= 34  AQCR= 136  COUNTY=  1780  AREA= 0003  SITE= 002  AGENCY= G  PROJECT= 04  TIME= C  REC YEAR= 60
PARAMETER C=   43502  METHOD C= 91  UNITS C= 01  REC MONTH= 59  REC DAY= 00  START HOUR= 52  SLAMS=    NBR OF READINGS IS 01
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 1  0023 **

ACTION C= 2  FORM C= 1  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 2  REC YEAR= 63
PARAMETER C=   62101  METHOD C= 20  UNITS C= 15  REC MONTH= 01  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 12
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 0  9000 ** S 0  9100 ** S 0  9200 ** S 0  9300 ** S 0  9400 ** S 0  9500 ** S 0  9600 ** S 0  9700 ** S 0  9800 ** S 0  9900 **
S 0  9901 ** S 0  9902 **

ACTION C= 2  FORM C= 1  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 2  REC YEAR= 63
PARAMETER C=   62101  METHOD C= 20  UNITS C= 15  REC MONTH= 01  REC DAY= 02  START HOUR= 00  SLAMS=    NBR OF READINGS IS 12
 U M T S A U = S   E.D N S A PEA   S F L O S   S A U - LAG B A K DEC H L C DE  B A K R A I G B A K *
S 1  9000 ** S 1  9100 ** S 1  9200 ** S 1  9300 ** S 1  9400 ** S 1  9500 ** S 1  9600 ** S 1  9700 ** S 1  9800 ** S 1  9900 **
S 1  9901 ** S 1  9902 **

ACTION C= 2  FORM C= 1  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 2  REC YEAR= 63
PARAMETER C=   62101  METHOD C= 20  UNITS C= 15  REC MONTH= 01  REC DAY= 03  START HOUR= 00  SLAMS=    NBR OF READINGS IS 12
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 2  9000 ** S 2  9100 ** S 2  9200 ** S 2  9300 ** S 2  9400 ** S 2  9500 ** S 2  9600 ** S 2  9700 ** S 2  9800 ** S 2  9900 **
S 2  9901 ** S 2  9902 **

ACTION C= 2  FORM C= 1  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 2  REC YEAR= 63
PARAMETER C=   62101  METHOD C= 20  UNITS C= 15  REC MONTH= 01  REC DAY= 04  START HOUR= 00  SLAMS=    NBR OF READINGS IS 12
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 3  9000 ** S 3  9100 ** S 3  9200 ** S 3  9300 ** S 3  9400 ** S 3  9500 ** S 3  9600 ** S 3  9700 ** S 3  9800 ** S 3  9900 **
S 3  9901 ** S 3  9902 **

ACTION C= 2  FORM C= 1  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 2  REC YEAR= 63
PARAMETER C=   62101  METHOD C= 20  UNITS C= 15  REC MONTH= 01  REC DAY= 05  START HOUR= 00  SLAMS=    NBR OF READINGS IS 12
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 4  9000 ** S 4  9100 ** S 4  9200 ** S 4  9300 ** S 4  9400 ** S 4  9500 ** S 4  9600 ** S 4  9700 ** S 4  9800 ** S 4  9900 **
S 4  9901 ** S 4  9902 **

ACTION C= 2  FORM C= 2  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 8  REC YEAR= 63
PARAMETER C=   61202  METHOD C= 21  UNITS C= 28  REC MONTH= 02  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 02
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 1  9222 ** S 4  9555 **

ACTION C= 2  FORM C= 2  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 8  REC YEAR= 63
PARAMETER C=   62101  METHOD C= 20  UNITS C= 15  REC MONTH= 02  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 02
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 2  9333 ** S 0  9666 **

ACTION C= 2  FORM C= 2  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 997  AGENCY= A  PROJECT= 05  TIME= 8  REC YEAR= 63
PARAMETER C=   62103  METHOD C= 20  UNITS C= 15  REC MONTH= 02  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 02
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 0  9111 ** S 3  9444 **

ACTION C= 2  FORM C= 3  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3000  SITE= 998  AGENCY= A  PROJECT= 05  TIME= B  REC YEAR= 63
PARAMETER C=   61202  METHOD C= 21  UNITS C= 28  REC MONTH= 01  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 04
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 1  1111 ** S 1  1122 ** S 1  1124 ** S 1  1124 **

ACTION C= 2  FORM C= 3  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3020  SITE= 996  AGENCY= A  PROJECT= 05  TIME= B  REC YEAR= 63
PARAMETER C=   61202  METHOD C= 21  UNITS C= 28  REC MONTH= 01  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 04
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 1  0511 ** S 1  0510 ** S 1  0510 ** S 1  0510 **

ACTION C= 2  FORM C= 3  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3140  SITE= 992  AGENCY= A  PROJECT= 05  TIME= B  REC YEAR= 63
PARAMETER C=   61202  METHOD C= 21  UNITS C= 28  REC MONTH= 01  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 04
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 1  0000 ** S 1  0000 ** S 1 -0020 ** S 1 -0020 **

ACTION C= 2  FORM C= 3  STATE #= 37  AQCR= 186  COUNTY=  3020  AREA= 3140  SITE= 994  AGENCY= A  PROJECT= 05  TIME= B  REC YEAR= 63
PARAMETER C=   61202  METHOD C= 21  UNITS C= 28  REC MONTH= 01  REC DAY= 01  START HOUR= 00  SLAMS=    NBR OF READINGS IS 04
SUBMIT STATUS= S  READINGS APPEAR AS FOLLOWS:  STATUS-FLAG BLANK DECIMAL-CODE  BLANK READING BLANK **
S 1 -0017 ** S 1 -0018 ** S 1 -0018 ** S 1 -0018 **

NUMBER OF RECORDS READ:          13
NUMBER OF RECORDS DUMPED:        13

PROGRAM NAME: ARPDUMP (AQ0310)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978
```

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Figure AQT22-2 - continued.  Procedure AQRPM25 -- program ARPDUMP

## AQHS-II Test 23

## Update the Master File

In this test run, the input AQDHS-II master file transactions are edited and converted into internal transactions using the cataloged procedure AQEDT10 which executes ASRTRAN (AQ0370), the master file input transaction sort program, and AEDMSTR (AQ0060), the master file transaction edit program. The cataloged procedure AQFMM10 is then used to update the AQDHS-II master file by executing ASRINTR (AQ0130), the master file internal transaction sort program; and AFMMSTR (AQ0100), the master file maintenance program.

In Test 5, the initial AQDHS-II master file was created using only one cataloged procedure which executed the same programs as this test run. By using two different procedures, the user can edit several different sets of input transactions and then perform a single file maintenance on all the transactions edited. This will result in operating cost savings since it makes it necessary to pass the master file only one time. Refer to Test 5 for a description of ASRTRAN (AQ0370), AEDMSTR (AQ0060), ASRINTR (AQ0130), and AFMMSTR (AQ0100).

The input master file transactions in Test 5 were used exclusively for creating master file records. However, in this test run, not only are records created, but exisitng master file records are changed and deleted.

To change a reading in a master file record, the user enters a transaction with the same key information as the master file record to be changed. Also, this transaction must have an action code of '3' and contain the new value(s) for the reading(s) to be changed. If these requirements are met, the non-blank readings of the transaction will replace the corresponding readings in the master file record. An individual reading can be deleted using this same process by changing the reading in the master file record to 9999.

Similarly, the deletion of a master file record requires that the user enter a transaction with the same key information as the master file record to be deleted. However, the transaction must also have an action code of '1', and the remaining transaction fields should contain blanks. It should be noted that the records are flagged for deletion as a result this test run but are not acturally deleted. When the master file is processed by ARPSARD (AQ0220), and the SAROAD date file is created, the records flagged for deletion will be physically deleted.

In order to add a reading to an existing master file record, the user can enter a transaction with the same key information as the master file record to be affected. This transaction should have an action code of '2' and contain the readings to be added.

The run stream for this test run contains the JCL necessary for updating an AQDHS-II master file. This run stream is shown in Figure AQT23-1. It does not show all the input master file transactions in the run stream but, it does show the necessary JCL.

First, the run stream executes the cataloged procedure AQEDT10. Through the use of substitutable parameters, the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), the input site file is specified as AQSITE01 (created and stored on disk in Test 2), and the output internal transaction file is named TRANS01. For the EDIT step, the user must supply the DD (data definition) information for the option card file and the input AQDHS-II master file transaction file. The option specified in this test run is LIST, and the default value of NOFLAGW will also be in effect. Refer to Figure AQT23-2 for the sample output produced by this procedure.

Next, the cataloged procedure AQFMM10 is executed. Substitutable parameters are used to specify the input master file as AQMST02N (created and stored on disk in Test 19), to specify the input master file internal transactions as TRANS01 (created and stored on disk in the first procedure of this test), and to name the updated master file AQMST03N. The user must supply the DD information for the option card file in the UPDATE step. The options specified for this test run are LIST and FLAGW. Figure AQT23-3 shows the sample output produced by this procedure.

```
//EPALMH23 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* THIS TEST IS THE FIRST MASTER FILE UPDATE SINCE THE ORIGINAL
//* MASTER WAS BUILT IN TEST 5; THE UPDATE INCLUDES CHANGES AND DELETES
//* AS WELL AS ADDS; THE TRANSACTION EDITOR PROGRAM AND THE
//* FILE MAINTENANCE PROGRAM ARE INVOKED BY TWO DIFFERENT PROCEDURES
//* IN THIS TEST; USING THESE SEPARATED PROCEDURES, THE USER MAY
//* MAKE MULTIPLE EDITS AND THEN PERFORM A SINGLE FILE MAINTENANCE
//* ON ALL THE TRANSACTIONS EDITED
//*
//TEST23A EXEC AQEDT10,
//             TRANS=TRANS01,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSITE01,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* EDIT AQDHS-II TRANSACTIONS AND CATALOGUE THE OUTPUT
//* INTERNAL TRANSACTIONS TO USE AS INPUT TO THE FILE MAINTENANCE
//* PROGRAM LATER
//*
//PRESORT.INPUT DD *
1373000127F021750701004420111074 332 357 383 418 408 357 281 214                    2
1373000127F021750701084420111074 063 208 316 316                                    2
1373000127F021750701084420111074                 449 561 673 638                    2
1373000127F021750701164420111074 704 673 602 561 408 094 077 002                    2
1373000127F021750702004420111074 306 332 316 265 245 230 214 214                    2
1373000127F021750702084420111074 094 265 383 459                                    2
1373000127F021750702084420111074                 469 469 500 485                    2
1373000127F021750702164420111074 469 449 469 469 398 245 028 079                    2
1373000127F021750703004420111074 063 079 255 230 230 230 214 230                    2
1373000127F021750703084420111074 281 347 449 485                                    2
1373000127F021750703084420111074                 485 469 500 520                    2
1373000127F021750703164420111074 469 510 500 500 408 255 383 459                    2
1373000127F021750704004420111074 306 296 316 281 316 281 265 265                    2
1373000127F021750704084420111074 306 459 587 602                                    2
1373000127F021750704084420111074                 602 638 663 663                    2
```

(Remainder of transactions omitted)

```
/*
//EDIT.OPTIONS DD *
NOLIST
/*
//TEST23B EXEC AQFMM10,
//             OLDMSTR=AQMST02N,
//             NEWMSTR=AQMST03N,
//             PRIMARY=1,
//             SECNDRY=1,
//             TRANS=TRANS01
//*
//* UPDATE THE MASTER FILE, AQMST02N, CREATED IN TEST 19 WITH THE
//* TRANSACTIONS EDITED IN STEP A
//*
//UPDATE.OPTIONS DD *
NOLIST NOFLAG*
/*
```

Figure AQT23-1. Run Stream

```
                    AUDHS-II MASTER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE

PROGRAM NAME: ASRTRAN (AQ0370)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:                748
NUMBER OF OUTPUT TRANSACTIONS:               748
NUMBER OF INPUT FORM 3 TRANSACTIONS:           0
NUMBER OF OUTPUT FORM 3 TRANSACTIONS:          0
```

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Figure AQT23-2. Procedure AQEDT10 -- program ASRTRAN

```
                     AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: AEDMSTR (A00060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: NOLIST NOFLAGW


INPUT TRANSACTIONS               ERRORS

1120001003C01178123016426021407345500600040502900270025002500260               2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

1120001003C011780131164210111061004000030002574780455747                       2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 45 - READING EXCEEDS MAXIMUM PERMITTED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 49 - READING EXCEEDS MAXIMUM PERMITTED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 53 - READING EXCEEDS MAXIMUM PERMITTED

1340001001A061650328004240131010003700379928                                   2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 41 - READING EXCEEDS MAXIMUM PERMITTED

1340001001A06165010100111019101000010001000200030005000680039021               2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 57 - READING EXCEEDS MAXIMUM PERMITTED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 61 - READING EXCEEDS MAXIMUM PERMITTED

1340001001A06179010100111019101000010001000200030005000680039021               2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 57 - READING EXCEEDS MAXIMUM PERMITTED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 61 - READING EXCEEDS MAXIMUM PERMITTED

1340001001A061790328004240131010003700379928                                   2
          *** AEDMSTR 042 CONDITIONAL - COLUMN 41 - READING EXCEEDS MAXIMUM PERMITTED


NUMBER OF TRANSACTIONS READ:                          748
NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:         748
NUMBER OF INTERNAL TRANSACTIONS CREATED:              748
NUMBER OF WARNING MESSAGES:                            58
NUMBER OF CONDITIONAL MESSAGES:                        10
NUMBER OF ERROR MESSAGES:                               0
NUMBER OF ABORT MESSAGES:                               0
```

(Page 2 of 2)

Figure AQT23-2 - continued. Procedure AQEDT10 -- program AEDMSTR

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```
                    AQDHS-II MASTER FILE INTERNAL TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE  1

PROGRAM NAME: ASRINTR (AQ0130)
REVISION LEVEL: 1-00
LAST UPDATE #: 28
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT INTERNAL TRANSACTIONS:          748
NUMBER OF OUTPUT INTERNAL TRANSACTIONS:         748
```

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Figure AQT23-3. Procedure AQFMM10 -- program ASRINTR

```
                                AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                         PAGE    1
PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


                    TABLE # 1
          SIGNED                        LAST DIGIT
          NUMBER                        OF NUMBER
                                        PRINTED
----------------------------------------------------
              -9                               R
              -8                               Q
              -7                               P
              -6                               O
              -5                               N
              -4                               M
              -3                               L
              -2                               K
              -1                               J
              -0
              +0
              +1                               A
              +2                               B
              +3                               C
              +4                               D
              +5                               E
              +6                               F
              +7                               G
              +8                               H
              +9                               I

THIS TABLE SHOWS THE PRINT CHARACTERS
FOR THE LAST DIGIT OF SIGNED DATA VALUES
WHICH MAY APPEAR IN THE AQDHS-II
MASTER FILE MAINTENANCE OUTPUT REPORTS

OPTIONS IN EFFECT:  NOLIST NOFLAGS
```

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Figure AQT23-3 - continued.  Procedure AQFMM10 -- program AFMMSTR

```
                          AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                    PAGE      2

TRANSACTION                      ERRORS/ACTION

12      34136178000003002G04C72435024101170312          010062
         *** AFMMSTR 003 ERROR - NO MATCHING KEY FOUND ON MASTER FILE - TRANSACTION REJECTED


NUMBER OF INPUT INTERNAL TRANSACTIONS:                      748
NUMBER OF INPUT MASTER FILE RECORDS:                        321
NUMBER OF MASTER FILE RECORDS FLAGGED FOR DELETION:           2
NUMBER OF MASTER FILE RECORDS ADDED:                        236
NUMBER OF OUTPUT MASTER FILE RECORDS:                       557
NUMBER OF WARNING MESSAGES:                                   0
NUMBER OF CONDITIONAL MESSAGES:                               0
NUMBER OF ERROR MESSAGES:                                     1
NUMBER OF ABORT MESSAGES:                                     0
NUMBER OF DISASTER MESSAGES:                                  0


PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

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Figure AQT23-3 - continued.  Procedure AQFMM10 -- program AFMMSTR

Pages 205 - 210 were deleted.

## AQDHS-II TEST 24

## Submit Another Quarterly Report to SAROAD

In this test run, the data from the updated AQDHS-II master file which have not previously been sent to SAROAD are converted to SAROAD transactions using the cataloged procedure AQRPM05. This procedure executes ARPSARD (AQ0220), the AQDHS-II to SAROAD conversion program.

The same program was used in Test 12 to submit a quarterly report to SAROAD. Any data which have already been submitted to SAROAD by ARPSARD (AQ0220) will not be submitted in this test. Status flags in the master file indicate which readings have been previously submitted to SAROAD. For a description of ARPSARD (AQ0220) refer to Test 12.

The run stream for this test run contains the JCL necessary for converting data from the updated AQDHS-II master file into SAROAD transactions. This run stream is shown in Figure AQT24-1.

The cataloged procedure executed by this run stream is AQRPM05. Through the use of substitutable parameters, the input master file is specified as AQMST03N (created and stored on disk in Test 23), and the output master file is named AQMST03S. In this test run, the SAROAD add file and the SAROAD change file are printed for verification purposes. However, the user will typically use the cataloged procedure AQRPM05 as designed to write these files to tape in order to submit them to SAROAD. An option card is not provided in this run stream which causes the default option to be in effect (that is, all data not previously submitted to SAROAD will be submitted by this run). If the user does provide an option card in the run stream, the DD (data definition) information for the option card file in the SUBMIT step is also needed. Refer to Figure AQT24-2 for the sample output produced by this procedure.

```
//AQSTST24 JOB RTI.C44.PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQMST03S,
// DISP=(OLD,DELETE)
//*
//* SUBMIT QUARTERLY REPORT TO SAROAD FROM AQMST03N, THE
//* UPDATED FILE FROM THE PRECEDING TEST; ANY RECORD THAT WAS SENT
//* BEFORE IN TEST 12 WILL NOT BE RE-SENT UNLESS DATA ON IT HAS
//* BEEN CHANGED
//*
//TEST24A EXEC AQRPM05,
//              OLDMSTR=AQMST03N,
//              NEWMSTR=AQMST03S,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* GENERATE NEW AQDHS-II FILE WITH ALL RECORDS FLAGGED SENT,
//* SAROAD ADD FILE (PRINTED),
//* AND SAROAD CHANGE FILE (PRINTED)
//*
//SUBMIT.AQSADDFL DD SYSOUT=A
//SUBMIT.AQSCHGFL DD SYSOUT=A
```

Figure AQT24-1. Run Stream

```
                              AQDHS-II TO SAROAD CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     1


PROGRAM NAME: ARPSARD (AR0220)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

NO SELECTION DATE OPTION USED - ALL RECORDS AVAILABLE FOR SAROAD OUTPUT


NUMBER OF FILE RECORDS READ:                                             557
NUMBER OF MASTER FILE RECORDS DELETED USING THE CHANGE OPTION:             2
NUMBER OF FILE RECORDS WRITTEN:                                          555
NUMBER OF ADD TRANSACTIONS SUBMITTED TO SAROAD:                          410
NUMBER OF CHANGE TRANSACTIONS SUBMITTED TO SAROAD:                         8
NUMBER OF ADD READINGS SUBMITTED TO SAROAD:                            8,296
NUMBER OF CHANGE READINGS SUBMITTED TO SAROAD:                            96
```

(Page 1 of 3)

Figure AQT24-2. Procedure AQRPM05 -- program ARPSARD

```
$2   ADD TRANSACTIONS CREATED BY ADDRS
1120001001C011781231004240133021 000 000 000 000 000 000 000 000 000 000 000 000
1120001001C011781231124240133021 000 000 000 000 000 000 000 000 000 000 000 000
1120001001C011790101004240133021 000 001 000 000 000 000 000 000 000 001 004 004
1120001001C011790101124240133021 006 008 004 004 005 005 002 001 000 000 000 000
1120001001C011790102004240133021 000 000 000                         005 006 007
1120001001C011790102124240133021 007 008 010 011 010 011 010 011 009 008 008 007
1120001001C011790131004240133021 005 005 006 007 007 006 006 006 008 011 011 013
1120001001C011790131124240133021 013 013 014 012 011 011 009 010 009 008 008 007
1120001001C011790201004240133021 007 007 006 005 004 004 004 007 004 010 011 012
1120001001C011790201124240133021 014 013 012 012 008 007 007 007 007 007 008 007
1120001001C011790203004240133021 000 000 000 000 000 000 000 000
1120001001C011790203124240133021     000 000 002 004 004 006 006 007 003 000 000
1120001003C011730911006110250140 003 004 002 003 003 004 002 003 003 005 002 003
1120001003C011730911126110250140 003 004 006 005 002 003 003 003 004 003 004 003
1120001003C011780415004210111051 290 170 170 170 120 120 230 290     690 230 340
1120001003C011780415124210111051 170 170 120 120 170 170 230 230 460 920 800 290
1120001003C011780131004210111061                                         034 031
1120001003C011780131124210111061 022 024 026 029 040 003 002574780455747
1120001003C011781122004260214073 360 345 340 335 350 375 385 760 900 840 400 320
1120001003C011781122124260214073 340 330 340 390 380 440 385 350 335 330 340 340
1120001003C011781230004260214073 155 150 150 155 150 150 150 145 155 170 150 160
1120001003C011781230124260214073 290 290 290 3354550 600 405 290 270 250 250 260
1120001003C011780625004420114010 039 024 029 029 029 029 029 034 034 309 049 069
1120001003C011780625124420114010 074 088 098 086 083 073 078 049 010 004 024 000
1340001001A061650101001110191010 001 001 002 003 005 00880039021
1340001001A061650328004240131010 037 0379928
1340001001A061790101001110191010 001 001 002 003 005 00880039021
1340001001A061790101121110191010                 001 001 002 003 005 008 003 021
1340001001A061790103001110191010 002 002 004 006 010 016 026 042
1340001001A061790104121110191010                 003 003 006 009 015 024 039 013
1340001001A061790106001110191010                                 005 005 010 015
1340001001A061790106121110191010 025 040 015 005
1340001001A061790108001110191010 008 008 016 024 040 014 004 018
1340001001A061790110001110191010                                 013 013 026 039
1340001001A061790110121110191010 015 004 019 023 021 021 042 013 005 018 023 041
1340001001A061790120001110191010 033 033 018 002 020 022 042 014 004 004 010 015
1340001001A061790120121110191010 025 040 015 005 037 037 028 017 005 012 007 019
1340001001A061790131001110191010                                 041 041 038 032
1340001001A061790131121110191010 020 002 022 024
1340001001A061790328004240131010 037 0379928
1340001001A065790301054240133021 001 001 002
1340001001A065790302054240133021 001 001 002
1340001001A065790303054240133021 002 002 004
1340001001A065790304054240133021 003 003 006
1340001001A065790305054240133021 005 005 010
1340001001A065790306054240133021 008 008 016
1340001001A065790307054240133021 013 013 026
1340001001A065790308054240133021 021 021 042
1340001001A065790324054240133021 033 033 018
1340001001A065790326054240133021 004 004 010
1340001001A065790330054240133021 041 041 038
1340001001A066790201064260282072 001 001
1340001001A066790203064260282072 001 001
1340001001A066790205064260282072 002 002
1340001001A066790207064260282072 003 003
1340001001A066790214064260282072 005 005
1340001001A066790220064260282072 008 008
1340001001A066790222064260282072 013 013
1340001001A066790224064260282072 021 021
1340001001A066790225064260282072 033 033
```

(Page 2 of 3)

Figure AQT24-2 - continued. Procedure AQRPM05 -- program ARPSARD

```
*3   CHANGE TRANSACTIONS CREATED BY AQDHS. RUN SAROAD EDITOR WITH DELETES OPTION
1100001001E021710606004240111073 080 100 101 102 102 110 113 110 110 121 110 100
1100001001E021710606124240111073 080 080 090 090 099 099 099 100 100 100 121 122
1100001001F021710607004240111070999999999999999999999999999999999999999999999999
1100001001E021710607124240111070999999999999999999999999999999999999999999999999
1100001001E021710621004240111070999999999999999999999999999999999999999999999999
1100001001F021710621124240111070999999999999999999999999999999999999999999999999
1100001001F021710622004240111073 080 080 090 090 099 099 099 100 100 100 121 122
1100001001F021710622124240111073 248 200 201 181 176 154 121 100 090 080 070 060
```

(Page 3 of 3)

Figure AQT24-2 - continued. Procedure AQRPM05 -- program ARPSARD

## AQDHS-II TEST 25

### Screen the Updated Master File for Anomalous Data

In this test run, the updated AQDHS-II master file is screened for anomalous data using the cataloged procedure AQRPM45. This procedure executes ACVANOM (AQ0040), the anomaly screening master file conversion program; and ARPANOM (AQ0320), the anomaly screening report program.

The same programs were used in Test 11 to screen the entire AQDHS-II master file for anomalous data. This test run takes advantage of the status flags set in Test 11 because they enable the anomaly screening programs to perform the anomaly screening tests only on data that has not been previously screened. For a description of ACVANOM (AQ0040) and ARPANOM (AQ0320) refer to Test 11.

The run stream for this test run contains the JCL necessary for screening the updated master file for anomalous data. This run stream is shown in Figure AQT25-1.

The cataloged procedure executed by this run stream is AQRPM45. Through the use of substitutable parameters, the input master file is specified as AQMST03S (created and stored on disk in Test 24), the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), and the output (or screened) master file is named AQMST03T. The user must supply the DD (data definition) information for the option card file. The option specified in the CONVERT step of this test run is FLAG LOW. In this test run, the skeleton transaction file is printed for verification purposes. However, the user will typically write this file to cards or disk in order to more easily add information to the transactions. The cataloged procedure AQRPM45 is designed to write the file to disk, so in order to write the file to cards the user must supply the appropriate DD information for the skeleton transaction file in the REPORT step. Refer to Figure AQT25-2 for the sample output produced by this procedure.

```
//AQSTST25 JOB RTI.C44,PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQMST03T,
// DISP=(OLD,DELETE)
//*
//* SCREEN THE MASTER FILE,AQMST03S, FOR ANOMALOUS DATA; MOST OF THE
//* RECORDS ON THIS FILE HAVE ALREADY BEEN SCREENED AND ARE
//* NOT RESCREENED IN THIS TEST
//*
//TEST25A EXEC AQRPM45,
//             OLDMSTR=AQMST03S,
//             NEWMSTR=AQMST03T,
//             PARMFIL=AQPARM01,
//             PRI1=1,
//             SEC1=1,
//             PRI2=1,
//             SEC2=1,
//             PRI3=1,
//             SEC3=1
//*
//* RESCREEN THE FILE FOR ANOMALOUS DATA,
//* THIS TIME USING THE LOW SHEWHART TEST;
//* PRINT THE SKELETON TRANSACTIONS
//*
//CONVERT.OPTIONS DD *
FLAG LOW
/*
//REPORT.FT10F001 DD SYSOUT=A
```

Figure AQT25-1. Run Stream

```
                    AQDMS-II ANOMALY SCREENING MASTER FILE CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     1


PROGRAM NAME: ACVANOM (AQ0040)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: LOW SHEWHART TEST


*** ACVANOM 007 CONDITIONAL - READING(S) >  9999.9999 IN STD UNITS, SCREENING NOT PERFORMED (340002001D051-760303-424011407)

NUMBER OF MASTER FILE RECORDS READ:                                    555
NUMBER OF MASTER FILE RECORDS WRITTEN:                                 555
NUMBER OF MASTER FILE RECORDS CONTAINING DATA TO BE SCREENED:          194
NUMBER OF RECORDS PASSED TO PROGRAM ARPANOM:                           585
NUMBER OF ABORT MESSAGES:                                                0
NUMBER OF CONDITIONAL MESSAGES:                                          1
```

(Page 1 of 4)

Figure AQT25-2. Procedure AQRPM45 -- program ACVANOM

```
                              AQDHS-II ANOMALY SCREENING REPORT PROGRAM  -  DIAGNOSTIC REPORT                 PAGE 1

PROGRAM NAME: ARPANOM (AQ0320)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
INCORPORATED: OCTOBER 31, 1978

OPTION IN EFFECT: LOW SHEWHART TEST




NUMBER OF INPUT RECORDS:                                          585
NUMBER OF INPUT RECORDS CONTAINING HOURLY DATA:                   576
NUMBER OF INPUT RECORDS CONTAINING DAILY DATA:                      6
NUMBER OF INPUT HEADER RECORDS:                                     2
NUMBER OF INPUT TRAILER RECORDS:                                    1
NUMBER OF TIMES MAXIMUM VALUE TEST FAILED:                         11
NUMBER OF TIMES ADJACENT HOURLY DIFFERENCE TEST FAILED:            13
NUMBER OF TIMES SPIKE TEST FAILED:                                  6
NUMBER OF TIMES DIXON RATIO TEST FAILED:                            2
NUMBER OF TIMES GAP TEST FAILED:                                    7
NUMBER OF TIMES SHEWHART TEST FAILED:                               0
NUMBER OF OUTPUT SKELETON TRANSACTIONS:                            17
```

(Page 2 of 4)

Figure AQT25-2 - continued.  Procedure AQRPM45 -- program ARPANOM

```
                              AQDHS-II ANOMALY SCREENING REPORT FOR HOURLY READINGS                                  PAGE   1

------------- COLUMNS 1 THRU 32 -------------   ----------------------------------------------------------------------------   ----    ----
0 00 0000 001 1 11 1 11 11 12 22 22222 22 33 3  READINGS(FORMAT IS N XXXX WHERE N=DECIMAL PT INDICATOR, XXXX=READING)          D R     GAP
1 23 4567 890 1 23 4 56 78 90 12 34567 89 01 2    CC33      CC37      CC41      CC45      CC49      CC53      CC57      CC61   TEST    TEST
----------------------------------------------  ----------------------------------------------------------------------------   ----    ----

1-10-0001-001-E-02-1-71-06-??-??-42401-11-07-*                                                                                         FAIL

1-12-0001-003-C-01-1-78-04-15-XX-42101-11-05-*                                                                                 N/A
                                    00          1 0290    1 0170    1 0170    1 0170    1 0120    1 0120    1 0230    1 0290

                                    06          0 9999    1 0690    1 0230    1 0340    1 0170    1 0170    1 0120    1 0120
                                                            A         A
                                    16          1 0170    1 0170    1 0230    1 0230    1 0460    1 0920    1 0800    1 0290
                                                                                          A         AM        AM        A

1-12-0001-003-C-01-1-78-04-??-??-42101-11-05-*                                                                                         FAIL

1-12-0001-003-C-01-1-78-01-31-XX-42101-11-06-*                                                                                 N/A
                                    00          1 9999    1 9999    1 9999    1 9999    1 9999    1 9999    1 9999    1 9999

                                    06          0 9999    0 9999    1 0034    1 0031    1 0022    1 0024    1 0026    1 0029

                                    16          1 0000    1 0003    1 0002    1 5747    1 8045    1 5747
                                                                      A         AMS       AMS       AMS

1-12-0001-003-C-01-1-78-01-??-??-42101-11-06-*                                                                                         FAIL

1-12-0001-003-C-01-1-78-11-22-XX-42602-14-07-*                                                                                 N/A
                                    00          3 0360    3 0345    3 0340    3 0335    3 0350    3 0375    3 0385    3 0760
                                                                                                              A         AM
                                    08          3 0400    3 0840    3 0400    3 0320    3 0340    3 0330    3 0340    3 0390
                                                  M         AM        A
                                    16          3 0380    3 0440    3 0385    3 0350    3 0335    3 0330    3 0340    3 0340


1-12-0001-003-C-01-1-78-11-??-??-42602-14-07-*                                                                                         FAIL

1-12-0001-003-C-01-1-78-12-30-XX-42602-14-07-*                                                                                 FAIL
                                    00          3 0155    3 0150    3 0150    3 0155    3 0150    3 0150    3 0150    3 0145

                                    08          3 0155    3 0170    3 0150    3 0160    3 0240    3 0290    3 0290    3 0335
                                                                                                                        AS
                                    16          3 4550    3 0600    3 0405    3 0290    3 0270    3 0250    3 0250    3 0260
                                                  AMS       AS

1-12-0001-003-C-01-1-78-12-??-??-42602-14-07-*                                                                                         FAIL

*  DECIMAL PT INDICATORS ARE LISTED WITH READINGS
** TEST CODES (PRINTED BELOW READINGS): A=ADJACENT HOURLY DIFFERENCE TEST, M=MAXIMUM VALUE TEST, S=SPIKE TEST
```

(Page 3 of 4)

Figure AQT25-2 - continued. Procedure AQRPM45 -- program ARPANOM

```
                                  AQDHS-II ANOMALY SCREENING REPORT FOR DAILY READINGS                                      PAGE    1

------------- COLUMNS 1 THRU 32 -------------  -----  ---------------------------------------------------------------------  ------
0 00 0000 001 1 11 1 11 11 12 22 22222 22 33 3                                                                               SHEWHT
1 23 4567 890 1 23 4 56 78 90 12 34567 89 01 2  DAYS   READINGS(FORMAT IS N XXXX WHERE N=DECIMAL PT INDICATOR, XXXX=READING)  TEST
---------------------------------------------  -----  ---------------------------------------------------------------------  ------

NO DAILY READINGS WERE JUDGED ANOMALOUS




-------------------------------------------------------------------------------------------------------------------------------------




1100001001E0217106????424011107?                                                3
1120001003C011780415??421011105?                                                3
1120001003C0117804????421011105?                                                3
1120001003C011780131??421011106?                                                3
1120001003C0117801????421011106?                                                3
1120001003C011781122??426021407?                                                3
1120001003C0117811????426021407?                                                3
1120001003C011781230??426021407?                                                3
1120001003C0117812????426021407?                                                3
1120001003C011780625??442011401?                                                3
1340001001A061650328??424013101?                                                3
1340001001A0616503????424013101?                                                3
1340001001A061790328??424013101?                                                3
1340001001A0617903????424013101?                                                3
1373000998A051760729??442011107?                                                3
1373020996A051750803??442011107?                                                3
1373020996A051750805??442011107?                                                3
```

(Page 4 of 4)

Figure AQT25-2 - continued. Procedure AQRPM45 -- program ARPANOM

## AQDHS-II TEST 26

## Archive Data from the Updated Master File and Merge this Data with Previously Archived Data

In this test run, data from the updated AQDHS-II master file is archived using the cataloged procedure AQMSM20 which executes AMSARCH (AQ0215), the master file archival program. The cataloged procedure AQMSM10 is then used to merge this archived master file with a previously generated archived master file by executing AMSMERG (AQ0210), the master file merge program.

AMSARCH (AQ0215) was used in Test 19 to archive data from an AQDHS-II master file. For a description of AMSARCH (AQ0215) refer to Test 19.

AMSMERG (AQ0210) creates a single AQDHS-II master file from two separate AQDHS-II master files. The two input master files can also be answer files produced by a retrival, archived master files, or any other combination of two files in master file format. However, the files must be in correct master file sequence and must not have any record key in common. The merged AQDHS-II master file will contain all the records from both files, and it will be in correct master file sequence.

The run stream for this test run contains the JCL necessary for archiving data from an AQDHS-II master file and merging two archived master files into one. This run stream is shown in Figure AQT26-1.

First, the run stream executes the cataloged procedure AQMSM20. Through the use of substitutable parameters, the input master file is specified as AQMST03T (created and stored disk in Test 25), the new master file is named AQMST04T, and the archived master file is named AQARCH1A. The user must supply the DD (data definition) information for the option card file. The option specified in the ARCHIVE step of this test run is 66 causing all data dated prior to 1966 to be archived. Figure AQT26-2 shows the sample output produced by this procedure.

Next, the cataloged procedure AQMSM10 is executed. Substitutable parameters are used to specify AQARCM01 (created and stored in Test 19) and

AQARCM1A (created and stored on disk by the above procedure) as the input master files to be merged, and AQARCM02 as the merged master file. Through the use of substitutable parameters, the input files to this step, AQARCM01 and AQARCM1A, are deleted after successful completion of the run. Refer to Figure AQT26-3 for the sample output produced by this procedure.

```
//AQSTST26 JOB RTI.C44,PO2443,MCMASTER,T=2,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.AQARCM02,
// DISP=(OLD,DELETE)
//*
//* ARCHIVE THE OLDEST DATA (1965) FROM THE CURRENT WORKING MASTER;
//* THEN MERGE THIS 1965 DATA WITH THE PREVIOUSLY ARCHIVED FILE
//* FROM TEST 19 AND CATALOGUE THE RESULTING TOTAL-ARCHIVED FILE
//*
//TEST26A EXEC AQMSM20,
//             MSTRFIL=AQMST03T,
//             NEWMSTR=AQMST04T,
//             ARCMSTR=AQARCM1A,
//             PRI1=1,
//             SEC1=1,
//             PRI2=1,
//             SEC2=1
//*
//* ARCHIVE THE 1965 DATA AS A TEMPORARY FILE
//*
//ARCHIVE.OPTIONS DD *
66
/*
//TEST26B EXEC AQMSM10,
//             NEWMSTR=AQARCM02,
//             INFILE1=AQARCM01,
//             INFILE2=AQARCM1A,
//             PRI=1,
//             SEC=1,
//             DISP1='OLD,DELETE,KEEP',
//             DISP2='OLD,DELETE,KEEP'
//*
//* MERGE THE 2 ARCHIVED FILES, FROM THIS TEST AND FROM TEST 19;
//* KEEP ONLY THE MERGED FILE
//*
```

Figure AQT26-1. Run Stream

```
                              AWDHS-II MASTER FILE ARCHIVAL PROGRAM  -  DIAGNOSTIC REPORT                    PAGE  1

PROGRAM NAME: AMSARCH (AQ0215)
REVISION LEVEL: 1-00
LAST UPDATE #:
DATE INCORPORATED: OCTOBER 31, 1978



ALL DATA PRIOR TO 1966 IS ARCHIVED




OLD MASTER COUNT:             555
NEW MASTER COUNT:             526
ARCHIVED MASTER COUNT:         29
```

Figure AQT26-2. Procedure AQMSM20 -- program AMSARCH

```
                              AQDHS-II MASTER FILE MERGE PROGRAM  -  DIAGNOSTIC REPORT                              PAGE  1

PROGRAM NAME: AMSMERG (AQ0210)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

INPUT FILE 1 CONTAINS:            13 RECORDS
INPUT FILE 2 CONTAINS:            29 RECORDS
OUTPUT FILE CONTAINS:             42 RECORDS
```

Figure AQT26-3.  Procedure AQMSM10 -- program AMSMERG

## AQDHS-II TEST 27

## Produce a Report on Violations of the Ozone Standard From the Current Master File

In this test run, a violations of standards report is generated for the latest AQDHS-II master file using the cataloged procedures AQSRS10 and AQRPM50. The procedure AQSRS10 executes ASRSTFL (AQ0360); AQRPM50 executes ARPVSTD (AQ0350).

ARPVSTD (AQ0350) examines the hourly ozone data in the master file for violations of the ozone standard; the current standard is that at the given site no more than one day out of the year should have an hourly ozone reading exceeding 0.12 parts per million.

The program accounts for periods of inadequate monitoring and periods during which monitoring has been waived in arriving at an estimate of the number of exceedances of the standard level during each year at the given site. The final expected number of exceedances which appears in the violations report for a given year is the average of the exceedance estimate for that year and the estimates from the preceding two years.

The following items of information appear for each site-year in the report: (1) the expected number of exceedances; (2) the attainment status during that year, based on whether or not the expected number of exceedances is greater than 1.0 (sometimes the attainment status cannot be established when one or both of the two years preceding the given year were not monitored); (3) a listing of the days during which the standard level was exceeded, along with maximum hourly readings for those days; (4) the maximum hourly reading recorded during the entire year; (5) the number of adequately monitored, or valid, days during the year (a day has been adequately monitored if a reading exceeding the standard level has been recorded during the day or if 75% of the readings during the critical 9 am or 9 pm period are present); (6) the percentage of adequately monitored days during the peak pollution potential season (this peak season is assumed by the program to cover the entire year at the given site unless the user specifies otherwise in the option file); and (7) the design value, which will be calculated only if the standard is violated, and which indicates how much higher the standard level would have to be before the standard could be attained during that year.

Besides the master file, the parameter file, the parameter standards file, and the sorted site file from ASRSTFL (AQ0360) are required as input to ARPVSTD (AQ0350). The parameter standards file is critical in the determination of the standard threshold level. The user must put an '01' in the primary standard code field of the parameter standards record containing the standard for ozone that he wishes to apply to the report. The value in the primary standard level field of that record will be used as the threshold level in the violations report standard.

ARPVSTD (AQ0350) uses two types of option cards. One is the program option card; this card, if present, must be the first one in the option file. The program option card controls the format of the violations report. The user may specify on this card any of the following options: (1) the maximum number of lines per report page (between 25 and 99); (2) whether all detail lines are to be written in the report (the NOSUPPRESS option) or only lines of information for years in which the standard is violated (the SUPPRESS option); and (3) whether warning-level diagnostic conditions are to be flagged (the options are 58 lines per page, SUPPRESS, and NOFLAGW. See Figure AQT27-1 for the program option card format.

The other optoin card type is the peak season specification card. This card defines the limits of the peak pollution potential season for a given site or geographical area. The user does this by specifying the following information on the card: (1) the report parameter code (currently, the code for ozone); (2) the key (state, AQCR, county, area, site, agency, project) for the site to which the peak season is to apply (if that peak season is to apply to an entire AQCR, county, or area, the user should code in only the proper portion of the site key); and (3) the peak season limits, specified in month and day. See Figure AQT27-2 for the peak season card format.

For more information on the functions of the optoin cards for ARPVSTD (AQ0350), see Section 6.4.9.3 of the AQDHS-II User's Guide.

The run stream for this test run contains the JCL necessary for obtaining a violations of standards report from the master file. The run stream JCL is shown in Figure AQT27-3.

The run stream executes the cataloged procedure AQRPM50. Through the use of substitutable parameters, the input master file is specified as AQMST04T (created and stored in Test 26), the input parameter file is specified as

AQPARM01 (created and stored in Test 1), the input parameter standards file is specified as AQSTND01 (created and stored in Test 3), and the input sorted site file is specified as AQSTESRT (created and stored in Test 6). No option cards for ARPVSTD (AQ0350) are used in the stream. Therefore, the program options in effect, by default, are 59 lines per page, SUPPRESS, and NOFLAGW; also, all site have the default peak pollution potential season of the full year. Refer to Figure AQT27-4 for the sample output produced by this procedure.

| Col 1 | Col 5 | Col 8 | Col 19 |
|---|---|---|---|
| OPT | | | |
| program option card identifier | line maximum option field | detail line suppression option field | warning-level flagging option field |

The program option field value are subject to the following restrictions:

1. The characters 'OPT' must apear in columns 1-3 of the card to identify it as the program option card;
2. The line maximum optin, if present, must be a numerical value between 25 and 00, beginning in column 5;
3. The detail line suppression option, if present, must be either 'SUPPRESS' or 'NOSUPPRESS', beginning in column 8;
4. The warning-level flagging option, if present, must be either 'FLAGW' or 'NOFLAGW', beginning in column 19.

Figure AQT27-1. Program Option Card Format for ARPVSTD

| Col 1 | Col 7 | Col 27 | Col 32 |
|---|---|---|---|
| parameter code field | site key field | peak season starting day | peak season ending day |

The peak season card values are subject to the following restrictions:

1. The parameter code field, currently, must contain one of the two valid ozone codes: 44101 or 44201;
2. The site key field is composed of the state, AQCR, county, area, site, agency, and project codes; if only part of the key in encoded, to indicate an area larger than a single site, that portion must be left-justified in the field;
3. The peak season starting day is coded as a vaild two-digit month, in columns 27-28, followed by a valid two-digit day, in columns 29-30;
4. The peak season ending day is coded in the same manner as the peak season starting day.

Figure AQT27-2. Peak Season Card Format for ARPVSTD

```
//EPALMH27 JOB (A087,MLMH),MCMASTER,TIME=2,PRTY=2
//*
//* PRODUCE A VIOLATIONS OF STANDARDS REPORT FOR
//* ALL HOURLY OZONE DATA IN THE MASTER FILE, AQMST04T
//*
//TEST27B EXEC AQRPM50,
//             MSTRFIL=AQMST04T,
//             SITESRT=AQSTESRT,
//             PARMFIL=AQPARM01,
//             STANFIL=AQSTND01
//*
//* PRODUCE THE VIOLATIONS REPORT; THE PROGRAM OPTION
//* CARD INCLUDES THE 'FLAGW' OPTION
//*
//REPORT.OPTIONS DD *
OPT                FLAGW
```

Figure AQT27-3. Run Stream

```
                                    AQDHS-II VIOLATIONS OF STANDARDS REPORT                                         PAGE    1

STATE: HAWAII                  POLLUTANT ID: 44201      POLLUTANT: OZONE
STANDARD: EXPECTED NUMBER OF DAYS PER CALENDAR YEAR WITH MAXIMUM HRLY AVERAGE CONCENTRATIONS ABOVE 0.12 PPM MUST NOT EXCEED 1


SI AQCR CNTY AREA SITE AGN PROJ  ADDRESS                                    CITY
12 060  0140 0001 003   C   01   WAIKIKI, HONOLULU, HONOLULU CO.            WAIKIKI

           NBR VALID  PK PRD                                                                       MAX     DESIGN  EXPCT #
     YEAR    DAYS     RDNG %         STATUS          DAILY MAXIMUM HOURLY CONCENTRATIONS ABOVE 0.12        VALUE    VALUE   EXCONCS
 *** 1978      1         0    STANDARD VIOLATED        0.16 (06/25)                                         0.16     0.16  365.0
   1 VALID DAILY MAXIMA AT THIS SITE BETWEEN 06/25/78 AND 06/25/78




*** LESS THAN 75% OF DAYS DURING PEAK POLLUTION POTENTIAL SEASON HAVE SUFFICIENT DATA
ALL READINGS EXPRESSED IN PARTS PER MILLION
```

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Figure AQT27-4. Procedure AQPRM50 - program ARPVSTD

```
                                    AQDHS-II VIOLATION OF STANDARDS PROGRAM DIAGNOSTIC REPORT                            PAGE     1

PROGRAM NAME: ARPVSID (A00350)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPT           FLAGW
        *** ARPVSID 010 CONDITIONAL - COLUMN 5: LINE MAX OPTION FIELD BLANK OR NONNUMERIC - 58 LINES PER PAGE USED
        *** ARPVSID 012 CONDITIONAL - COLUMN 8: MISSING OR INVALID SUPPRESS OPTION -  SUPPRESS  USED

USER-SPECIFIED PROGRAM OPTIONS ARE 58 LINES PER PAGE, SUPPRESS  , AND FLAGW

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000127F02175442011107071300 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000127F02177442011107090500 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000127F02177442011107090900 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000127F02177442011107091800 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000132F02176442011107071300 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000132F02176442011107072600 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000132F02177442011107082900 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000132F02177442011107090300 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000997A05176442011107072400 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000997A05176442011107072500 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000997A05176442011107072600 HAS NO VALID MAX

        *** ARPVSID 026 WARNING - MASTER RECORD WITH KEY 3718630203000997A05177442011107082700 HAS NO VALID MAX

NUMBER OF PARAMETER STANDARDS RECORDS READ:      43
NUMBER OF PARAMETER RECORDS READ:                89
NUMBER OF SITE RECORDS READ:                     54
NUMBER OF MASTER RECORDS READ:                  526
NUMBER OF PEAK SEASON CARDS READ:                 0
NUMBER OF VALID PEAK PERIOD CARDS:                0
NUMBER OF WARNING MESSAGES:                      20
NUMBER OF CONDITIONAL MESSAGES:                   2
NUMBER OF ERROR MESSAGES:                         0
NUMBER OF ABORT MESSAGES:                         0
```

(Page 2 of 2)

Figure AQT27-4 - continued. Procedure AQRPM50 - program ARPVSTD

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## AQDHS-II AD HOC TEST 1

## Resubmit 1979 Data to SAROAD

Suppose an agency has submitted all of its data up to the third quarter of 1980 to SAROAD but it is necessary to resubmit all 1979 data. How can this be accomplished by AQDHS-II, since the 1979 readings in the master file have been flagged as sent?

This ad hoc test demonstrates how the 1979 data can be resubmitted. By means of a retrieval, all 1979 data from the master file is returned to a non-sent status. The retrieval is performed using the cataloged procedure AQRTM10, which invokes the following steps:

1) ARTLNGP (AQ0110), the retrieval language processor;
2) the COBOL compiler and linkage editor; and
3) ARTGENR (AQ0120), the generated retrieval program.

The cataloged procedure AQRPM05 is then used to submit all the data in the retrieved file flagged not sent to SAROAD by executing ARPSARD (AQ0220), the AQDHS-II to SAROAD conversion program.

For a description of the retrieval programs, ARTLNGP (AQ0110) and ARTGENR (AQ0120), refer to Test 13. For a description of the AQDHS-II to SAROAD conversion program, ARPSARD (AQ0220), see Test 12.

In this test run, the retrieval request cards which are used as input to ARTLNGP (AQ0110) are written in COBOL. The use of in-line COBOL sentences requires the insertion of the keyword USER beginning in column 10 of the $$SELECT card. Following the $$SELECT card in this test run are COBOL sentences to accomplish the following:

1) Each record of the input master file is retrieved. (The data element RECORD-QUALIFIES-SW is set to TRUE.)
2) For each record having 1979 data, the record status flag and reading status flags are set to add, not sent.

An option card is used in the SAROAD conversion step, which contains the digits 7912 in columns one through four; this indicates to ARPSARD (AQ0220) that no data beyond December 1979 is to be submitted to SAROAD, even if the status flags indicate that it should be. This cutoff date helps accomplish the purpose of the run: to resubmit only 1979 data.

The run stream for this test run contains the JCL necessary for resubmitting 1979 data to SAROAD. This run stream is shown in Figure AHT1-1.

First, the run stream executes the cataloged procedure AQRTM10. As indicated by the substitutable parameters, the input master file is specified as AQMST04T and the output answer file is named TEMPRETR. Note that AQMST04T was established as the active master file in Test 26 when data was archived from master file AQMST03T. Since all data in AQMST03T was flagged sent (refer to test 24), all data in AQMST04T is also flagged sent. The user must supply the appropriate DD information for the input retrieval specification cards in the COMPILE step. In this test run, these cards are used to return all 1979 data in the master file to a non-sent status. Figure AHT1-2 shows sample output from the execution of the cataloged procedure, AQRTM10.

Next, the run stream executes AQRPM05. Substitutable parameters are used to specify TEMPRETR (created by the first procedure in this test run) as the input master file and TEMSARD as the output master file. In this test run, the SAROAD add file and the SAROAD change file are printed for verification purposes. However, the user will typically use the cataloged procedure as designed to write these files to tape in order to submit them to SAROAD. The user must supply the DD information for the option card file. The date option specified in the SUBMIT step of this test run is 7912. Refer to Figure AHT1-3 for the sample output produced by this procedure.

There are two important aspects of this test run: (1) if the input master file contained data dated prior to 1979 flagged as add or change (pre-1979 data that had been added or changed after the latest SAROAD submission), that data would be included in the SAROAD add or change files created during the execution of ARPSARD (AQ0220); and (2) in an operational environment, the master file produced by ARPSARD (AQ0220) would serve as the new master file since it reflects the correct submission status of all data.

```
//ADHOC01 JOB RTI.C44.PO2443,MCMASTER,T=3,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//*
//* RESUBMIT ALL 1979 DATA TO SAROAD USING THE FOLLOWING TECHNIQUE:
//* FIRST, RETRIEVE THE ENTIRE MASTER FILE, CHANGING ALL STATUS-FLAGS
//* AND RECORD-STATUS-FLAGS FROM A 'SENT' STATUS TO A 'NOT-SENT' STATUS;
//* SECOND, INPUT THIS RETRIEVED FILE TO THE SAROAD REPORT PROGRAM
//*
//ADHOC01A EXEC AQRTM10,
//             MSTRFIL=AQMST04T,
//             ANSWRFL=TEMPRETR,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* RETRIEVE THE FILE USING IN-LINE COBOL SPECIFICATIONS
//*
//COMPILE.INPUT DD *
$$SELECT USER
       GO TO USER-PARAGRAPH.
         USER-REPEAT.
           IF DATA-FIELD (SUB) IS NOT EQUAL TO 9999
             IF STATUS-FLAG (SUB) IS EQUAL TO 'S' OR
                 STATUS-FLAG (SUB) IS EQUAL TO 'C'
               MOVE 'A' TO STATUS-FLAG (SUB)
             ELSE
               IF STATUS-FLAG (SUB) IS EQUAL TO 'T' OR
                   STATUS-FLAG (SUB) IS EQUAL TO 'D'
                 MOVE 'B' TO STATUS-FLAG (SUB).
           ADD 1 TO SUB.
         USER-REPEAT-END.
           EXIT.

         USER-PARAGRAPH.
           MOVE TRUE TO RECORD-QUALIFIES-SW.
           IF YEAR IS EQUAL TO '79'
             MOVE 1 TO SUB
             PERFORM USER-REPEAT THRU USER-REPEAT-END
                 NBR-OF-READINGS TIMES
             IF RECORD-STATUS-FLAG IS EQUAL TO 'S'
               MOVE 'N' TO RECORD-STATUS-FLAG
             ELSE
               IF RECORD-STATUS-FLAG IS EQUAL TO 'T'
                 MOVE 'V' TO RECORD-STATUS-FLAG.
         USER-PARAGRAPH-END.
           EXIT.
$$END
/*
//ADHOC01B EXEC AQRPM05,
//             OLDMSTR=TEMPRETR,
//             NEWMSTR=TEMPSARD,
//             DISP1='NEW,PASS',
//             PRIMARY=1,
//             SECNDRY=1
//*
//* SEND DATA TO SAROAD USING A CUTOFF MONTH OF DECEMBER, 1979,
//* IN THE OPTION CARD;  THUS, NO DATA AFTER 1979 WILL BE SUBMITTED
//* TO SAROAD
//*
//SUBMIT.AQSADDFL DD SYSOUT=A
//SUBMIT.AQSCHGFL DD SYSOUT=A
//SUBMIT.OPTION DD *
7912
/*
```

Figure AHT1-1. Run Stream

```
                         AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1
PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

INPUT (CONTROL CARDS):

$$SELECT USER
           GO TO USER-PARAGRAPH.
         USER-REPEAT.
           IF DATA-FIELD (SUB) IS NOT EQUAL TO 9999
             IF STATUS-FLAG (SUB) IS EQUAL TO 'S' OR
                 STATUS-FLAG (SUB) IS EQUAL TO 'C'
               MOVE 'A' TO STATUS-FLAG (SUB)
             ELSE
               IF STATUS-FLAG (SUB) IS EQUAL TO 'T' OR
                   STATUS-FLAG (SUB) IS EQUAL TO 'D'
                 MOVE 'B' TO STATUS-FLAG (SUB).
           ADD 1 TO SUB.
         USER-REPEAT-END.
           EXIT.

         USER-PARAGRAPH.
           MOVE TRUE TO RECORD-QUALIFIES-SW.
           IF YEAR IS EQUAL TO '79'
             MOVE 1 TO SUB
             PERFORM USER-REPEAT THRU USER-REPEAT-END
                 NBR-OF-READINGS TIMES
             IF RECORD-STATUS-FLAG IS EQUAL TO 'S'
               MOVE 'N' TO RECORD-STATUS-FLAG
             ELSE
               IF RECORD-STATUS-FLAG IS EQUAL TO 'T'
                 MOVE 'V' TO RECORD-STATUS-FLAG.
         USER-PARAGRAPH-END.
           EXIT.
$$END


NUMBER OF CONTROL CARDS READ:                       29
NUMBER OF RETRIEVAL SKELETON RECORDS READ:       1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:      1,215
NUMBER OF CONDITIONAL MESSAGES:                      0
NUMBER OF ERROR MESSAGES:                            0
NUMBER OF ABORT MESSAGES:                            0
```

(Page 1 of 2)

Figure AHT1-2. Procedure AQRTM10 -- program ARTLNGP

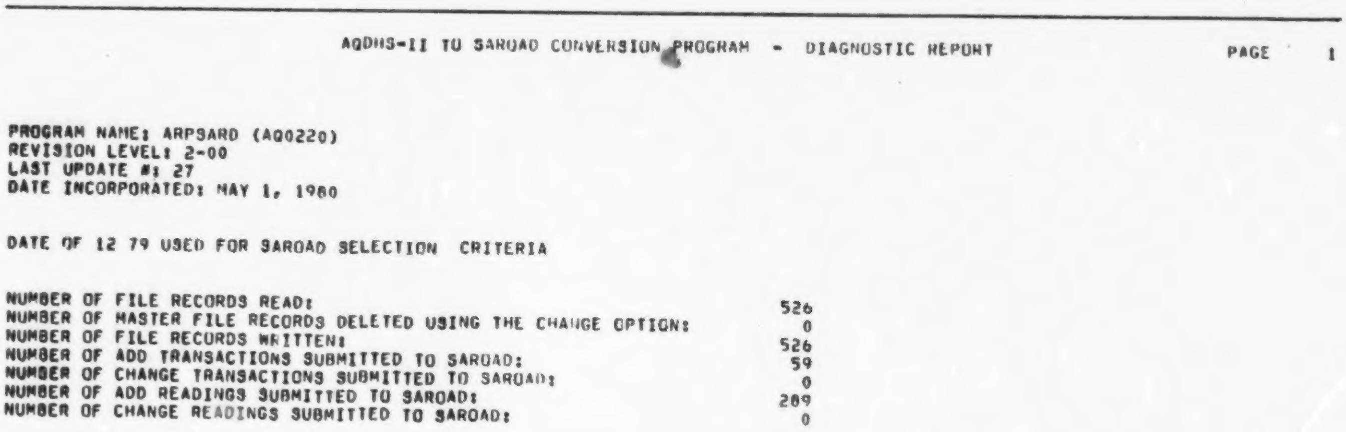
```
                               AQDMS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                     PAGE    1

PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979

NUMBER OF MASTER FILE RECORDS READ:                  526
NUMBER OF ANSWER FILE RECORDS WRITTEN:               526
NUMBER OF CONDITIONAL MESSAGES:                        0
NUMBER OF ABORT MESSAGES:                              0
```

(Page 2 of 2)

Figure AHT1-2 - continued.  Procedure AQRTM10 -- program ARTGENR



```
                          AQDHS-II TO SAROAD CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ARPSARD (AQ0220)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

DATE OF 12 79 USED FOR SAROAD SELECTION  CRITERIA

NUMBER OF FILE RECORDS READ:                                           526
NUMBER OF MASTER FILE RECORDS DELETED USING THE CHANGE OPTION:           0
NUMBER OF FILE RECORDS WRITTEN:                                        526
NUMBER OF ADD TRANSACTIONS SUBMITTED TO SAROAD:                         59
NUMBER OF CHANGE TRANSACTIONS SUBMITTED TO SAROAD:                       0
NUMBER OF ADD READINGS SUBMITTED TO SAROAD:                            289
NUMBER OF CHANGE READINGS SUBMITTED TO SAROAD:                           0
```

(Page 1 of 2)

Figure AHT1-3.  Procedure AQRPM05 -- program ARPSARD

```
$2    ADD TRANSACTIONS CREATED BY AQDHS
1120001001C011790101004240133021 000 001 000 000 000 000 000 000 000 001 004 004
1120001001C011790101124240133021 006 008 004 004 005 005 002 001 000 000 000 000
1120001001C011790102004240133021 000 000 000                             005 006 007
1120001001C011790102124240133021 007 008 010 011 010 011 010 011 009 008 008 007
1120001001C011790131004240133021 005 005 006 007 007 006 006 006 008 011 011 013
1120001001C011790131124240133021 013 013 014 012 011 011 009 010 009 008 008 007
1120001001C011790201004240133021 007 007 006 005 004 004 004 007 009 010 011 012
1120001001C011790201124240133021 014 013 012 012 008 007 007 007 007 007 008 007
1120001001C011790203004240133021 000 000 000 000 000 000 000 000
1120001001C011790203124240133021     000 000 002 004 004 006 006 007 003 000 000
1340001001A061790101001110191010 001 001 002 003 005 00880039021
1340001001A061790101121110191010                 001 001 002 003 005 008 003 021
1340001001A061790103001110191010 002 002 004 006 010 016 026 042
1340001001A061790104121110191010                 003 003 006 009 015 024 039 013
1340001001A061790106001110191010                                 005 005 010 015
1340001001A061790106121110191010 025 040 015 005
1340001001A061790108001110191010 008 008 016 024 040 018 004 018
1340001001A061790110001110191010                                 013 013 026 039
1340001001A061790110121110191010 015 004 019 023 021 021 042 013 005 018 023 041
1340001001A061790120001110191010 033 033 018 002 020 022 042 014 004 004 010 015
1340001001A061790120121110191010 025 040 015 005 037 037 028 017 045 012 007 019
1340001001A061790131001110191010                                 041 041 038 032
1340001001A061790131121110191010 020 002 022 024
1340001001A061790328004240131010 037 0379928
1340001001A065790301054240133021 001 001 002
1340001001A065790302054240133021 001 001 002
1340001001A065790303054240133021 002 002 004
1340001001A065790304054240133021 003 003 006
1340001001A065790305054240133021 005 005 010
1340001001A065790306054240133021 008 008 016
1340001001A065790307054240133021 013 013 026
1340001001A065790308054240133021 021 021 042
1340001001A065790324054240133021 033 033 018
1340001001A065790326054240133021 004 004 010
1340001001A065790330054240133021 041 041 038
1340001001A066790201064260282072 001 001
1340001001A066790203064260282072 001 001
1340001001A066790205064260282072 002 002
1340001001A066790207064260282072 003 003
1340001001A066790214064260282072 005 005
1340001001A066790220064260282072 008 008
1340001001A066790222064260282072 013 013
1340001001A066790224064260282072 021 021
1340001001A066790225064260282072 033 033
1340001001A066790226064260282072 004 004
1340001001A066790227064260282072 037 037
1340001001A066790228064260282072 041 041
1340001001A066790201064260314072 001 001
1340001001A066790203064260314072 001 001
1340001001A066790205064260314072 002 002
1340001001A066790207064260314072 003 003
1340001001A066790214064260314072 005 005
1340001001A066790220064260314072 008 008
1340001001A066790222064260314072 013 013
1340001001A066790224064260314072 021 021
1340001001A066790225064260314072 033 033
1340001001A066790226064260314072 004 004
1340001001A066790227064260314072 037 037
1340001001A066790228064260314072 041 041

------------------------------------------------------------------------------------------

$3    CHANGE TRANSACTIONS CREATED BY AQDHS. RUN SAROAD EDITOR WITH DELETES OPTION
```

(Page 2 of 2)

Figure AHT1-3 - continued. Procedure AQRPM05 -- program ARPSARD

## AQDHS-II AD HOC TEST 2

## Rescreen all Data from the Master File

Just as it was possible (in Ad Hoc Test 1) to resubmit data to SAROAD by manipulating the master file status flags, it is possible to rescreen the master file data with a similar technique.

In this test run, all data from the AQDHS-II master file is returned to a non-screened status by means of a retrieval using the cataloged procedure AQRTM10. This procedure executes ARTLNGP (AQ0110), the retrieval language processor program; the COBOL compiler; the linkage editor; and ARTGENR (AQ0120), the generated retrieval program. The retrieved file is then rescreened using the cataloged procedure AQRPM45, which executes ACVANOM (AQ0040) and ARPANOM (AQ0320), the anomaly screening programs.

For a description of the retrieval programs, refer to Test 13. And, a description of ACVANOM (AQ0040) and ARPANOM (AQ0320) can be found in Test 11.

The retrieval request cards used in this test run are in the COBOL language as in the Ad Hoc Test 1. However, unlike Ad Hoc Test 1, in which in-line COBOL sentences were used, the sentences in this run are stored in a copy member named COPYEXM2. To use a copy member, two keywords must be coded on the $$SELECT card: the word USER beginning in column 10 and the name of the copy member beginning in column 16. The COBOL sentences in copy member COPYEXM2 cause all records of the input master file to be retrieved. Also, the record status flag and the reading status flags of each record are set to non-screened.

The run stream for this test run contains the JCL necessary to rescreen all data from the AQDHS-II master file. This run stream is shown in Figure AHT2-1. The COBOL sentences stored in copy member COPYEXM2 are shown in Figure AHT2-2.

First, the run stream executes cataloged procedure AQRTM10 to produce the desired answer file. Through the use of substitutable parameters, the input master file is specified as AQMST04T (created and stored on disk in Test 26) and the output answer file is named TEMPRETR. The user must supply the DD information for the input retrieval specification cards in the COMPILE step. Refer to Figure AHT2-3 for the sample output produced by this procedure.

Next, the run stream executes the cataloged procedure AQRPM45 to screen the answer file. Substitutable parameters are used to specified TEMPRETR (created in the first procedure of this test) as the input master file, AQPARM01 (created and stored on disk in Test 1) as the input parameter file, and SAVESCRN as the output master file. The user must supply the DD information for the option card file. The option specified in the CONVERT step of this test run is FLAG LOW, which indicates that the low Shewhart test is to be applied. The FORTRAN-compatible file passed from ACVANOM (AQ0040) to ARPANOM (AQ0320), defined in the cataloged procedure AQRPM45 as a temporary file, is redefined in the CONVERT step of this run stream as a permanent file (data set name FORTANOM). This technique could be used to save any temporary file in any of the AQDHS-II procedures; however, the user will not normally need to save temporary files. In this test run, the skeleton master file transactions are printed for verification purposes. Normally, the user would write these skeleton transactions to cards or disk to be used in correcting readings in the master file. Figure AHT2-4 shows the sample output produced by this procedure.

An important aspect of this test run is that in an operational environment the master file produced by ACVANOM (AQ0040) in the anomaly screening step of this test run would be the new master file because it reflects the latest screening status of the readings in the master file.

```
//ADHOC02 JOB RTI.C44.PO2443,MCMASTER,T=3,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44.PO2069.MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.FORTANOM,
// DISP=(OLD,DELETE)
//DD2 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.SAVESCRN,
// DISP=(OLD,DELETE)
//*
//* RESCREEN ALL MASTER FILE RECORDS FOR ANOMALOUS DATA
//* USING A TECHNIQUE SIMILAR TO THAT IN ADHOC01:
//* (1) RETRIEVE ALL RECORDS FROM THE MASTER FILE, CHANGING ALL
//* STATUS-FLAGS AND RECORD-STATUS-FLAGS FROM A 'SCREENED' STATUS TO
//* A 'NOT-SCREENED' STATUS;
//* (2) INPUT THIS RETRIEVED FILE TO THE ANOMALY SCREENING PROGRAM
//*
//ADHOC02A EXEC AQRTM10,
//             MSTRFIL=AQMST04T,
//             ANSWRFL=TEMPRETR,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* RETRIEVE THE FILE USING A COBOL COPY MEMBER,
//* NAMED 'COPYEXM2'
//*
//COMPILE.INPUT DD *
$$SELECT USER  COPYEXM2
$$END
/*
//ADHOC02B EXEC AQRPM45,
//             OLDMSTR=TEMPRETR,
//             NEWMSTR=SAVESCRN,
//             PARMFIL=AQPARM01,
//             TIME1=3,
//             PRI1=1,
//             SEC1=1,
//             PRI2=1,
//             SEC2=1,
//             PRI3=1,
//             SEC3=1
//*
//* PRODUCE ANOMALY SCREENING REPORT; THE OPTION CARD CONTAINS
//* THE VALUE 'FLAG LOW'; THIS INDICATES THAT THE LOW
//* SHEWHART TEST IS TO BE USED; THE SKELETON TRANSACTIONS PRODUCED FOR
//* ANOMALOUS DATA ARE PRINTED
//*
//CONVERT.AQSANOMF DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.FORTANOM,
// DISP=(NEW,CATLG,DELETE),UNIT=DISK,VOL=SER=RTI777,SPACE=(TRK,(1,1))
//CONVERT.OPTIONS DD *
FLAG LOW
/*
//REPORT.FT09F001 DD DISP=OLD,
// DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.FORTANOM
//REPORT.FT10F001 DD SYSOUT=A
```

Figure AHT2-1. Run Stream

```
    GO TO USER-PARAGRAPH.                                               00000010
USER-REPEAT.                                                            00000020
    IF DATA-FIELD (SUB) NOT EQUAL TO 9999                               00000030
      IF STATUS-FLAG (SUB) EQUAL TO 'B'                                 00000040
        MOVE 'A' TO STATUS-FLAG (SUB)                                   00000050
      ELSE                                                              00000060
        IF STATUS-FLAG (SUB) EQUAL TO 'D'                               00000070
          MOVE 'C' TO STATUS-FLAG (SUB)                                 00000080
        ELSE                                                            00000090
          IF STATUS-FLAG (SUB) EQUAL TO 'T'                             00000100
            MOVE 'S' TO STATUS-FLAG (SUB).                              00000110
    ADD BINARY-1 TO SUB.                                                00000120
USER-REPEAT-END.                                                        00000130
    EXIT.                                                               00000140
USER-PARAGRAPH.                                                         00000150
    MOVE TRUE TO RECORD-QUALIFIES-SW.                                   00000160
    MOVE BINARY-1 TO SUB.                                               00000170
    PERFORM USER-REPEAT THRU USER-REPEAT-END                            00000180
        NBR-OF-READINGS TIMES.                                          00000190
    IF RECORD-STATUS-FLAG EQUAL TO 'T'                                  00000200
      MOVE 'S' TO RECORD-STATUS-FLAG                                    00000210
    ELSE                                                                00000220
      IF RECORD-STATUS-FLAG EQUAL TO 'V'                                00000230
        MOVE 'N' TO RECORD-STATUS-FLAG.                                 00000240
USER-PARAGRAPH-END.                                                     00000250
    EXIT.                                                               00000260
```

Figure AHT2-2.  Copy Member:  COPYEXM2

```
                         AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT               PAGE     1
PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


INPUT (CONTROL CARDS):

$$SELECT USER  COPYEXM2                                                   27.
$$END                                                                     28.

NUMBER OF CONTROL CARDS READ:                     2
NUMBER OF RETRIEVAL SKELETON RECORDS READ:    1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:   1,161
NUMBER OF CONDITIONAL MESSAGES:                   0
NUMBER OF ERROR MESSAGES:                         0
NUMBER OF ABORT MESSAGES:                         0
```

```
-----------------------------------------------------------------------------------------------------------------------
```

```
                           AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     1
PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979


NUMBER OF MASTER FILE RECORDS READ:                   526
NUMBER OF ANSWER FILE RECORDS WRITTEN:                526
NUMBER OF CONDITIONAL MESSAGES:                         0
NUMBER OF ABORT MESSAGES:                               0
```

Figure AHT2-3. Procedure AQRTM10 -- programs ARTLNGP and ARTGENR

```
                    AQDHS-II ANOMALY SCREENING MASTER FILE CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                  PAGE     1


PROGRAM NAME: ACVANOM (AQ0040)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: LOW SHEWHART TEST


*** ACVANOM 007 CONDITIONAL - READING(S) >  9999.9999 IN STD UNITS, SCREENING NOT PERFORMED (340002001D051-760303-424011407)

NUMBER OF MASTER FILE RECORDS READ:                                  526
NUMBER OF MASTER FILE RECORDS WRITTEN:                               526
NUMBER OF MASTER FILE RECORDS CONTAINING DATA TO BE SCREENED:        240
NUMBER OF RECORDS PASSED TO PROGRAM ARPANOM:                         705
NUMBER OF ABORT MESSAGES:                                              0
NUMBER OF CONDITIONAL MESSAGES:                                        1


------------------------------------------------------------------------------------------------------------------------


                           AQDHS-II ANOMALY SCREENING REPORT PROGRAM  -  DIAGNOSTIC REPORT                  PAGE 1


PROGRAM NAME: ARPANOM (AQ0320)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
INCORPORATED: OCTOBER 31, 1978

OPTION IN EFFECT: LOW SHEWHART TEST




NUMBER OF INPUT RECORDS:                                        705
NUMBER OF INPUT RECORDS CONTAINING HOURLY DATA:                 608
NUMBER OF INPUT RECORDS CONTAINING DAILY DATA:                   94
NUMBER OF INPUT HEADER RECORDS:                                   2
NUMBER OF INPUT TRAILER RECORDS:                                  1
NUMBER OF TIMES MAXIMUM VALUE TEST FAILED:                       16
NUMBER OF TIMES ADJACENT HOURLY DIFFERENCE TEST FAILED:          24
NUMBER OF TIMES SPIKE TEST FAILED:                               12
NUMBER OF TIMES DIXON RATIO TEST FAILED:                          5
NUMBER OF TIMES GAP TEST FAILED:                                  8
NUMBER OF TIMES SHEWHART TEST FAILED:                            12
NUMBER OF OUTPUT SKELETON TRANSACTIONS:                          36
```

(Page 1 of 4)

Figure AHT2-4. Procedure AQRPM45 -- programs ACVANOM and ARPANOM

```
ARDHS-II ANOMALY SCREENING REPORT FOR HOURLY READINGS                                        PAGE    1

-------------- COLUMNS 1 THRU 32 --------------   --------------------------------------------------------------------   ----   ----
0 00 0000 001 1 11 1 11 11 12 22 22222 22 33 3   READINGS(FORMAT IS N XXXX WHERE N=DECIMAL PT INDICATOR, XXXX=READING)   D R    GAP
1 23 4567 890 1 23 4 56 78 90 12 34567 89 01 2     CC33     CC37     CC41     CC45     CC49     CC53     CC57     CC61    TEST   TEST
-----------------------------------------------   --------------------------------------------------------------------   ----   ----

1-10-0001-001-F-02-1-71-06-05-XX-42401-11-07-*                                                                           PASS
                                    00            2 0003   2 0004   2 0004   2 0004   2 0004   2 0005   2 0006   2 0006

                                    08            2 0006   2 0006   2 0004   2 0004   2 0003   2 0003   2 0003   2 0003

                                    16            2 0003   2 0006   2 0018   2 0020   2 0034   2 0044   2 0054   2 0060
                                                                               A        A                 M        M

1-10-0001-001-E-02-1-71-06-??-??-42401-11-07-*                                                                                  FAIL

1-12-0001-003-C-01-1-78-04-15-XX-42101-11-05-*                                                                           N/A
                                    00            1 0290   1 0170   1 0170   1 0170   1 0120   1 0120   1 0230   1 0290

                                    08            0 9999   1 0690   1 0230   1 0340   1 0170   1 0170   1 0120   1 0120
                                                             A        A
                                    16            1 0170   1 0170   1 0230   1 0230   1 0460   1 0920   1 0800   1 0290
                                                                                        A        AM       AM       A

1-12-0001-003-C-01-1-78-04-??-??-42101-11-05-*                                                                                  FAIL

1-12-0001-003-C-01-1-78-01-31-XX-42101-11-06-*                                                                           N/A
                                    00            1 9999   1 9999   1 9999   1 9999   1 9999   1 9999   1 9999   1 9999

                                    08            0 9999   0 9999   1 0034   1 0031   1 0022   1 0024   1 0026   1 0029

                                    16            1 0040   1 0003   1 0002   1 5747   1 8045   1 5747
                                                                      A        AMS      AMS      AMS

1-12-0001-003-C-01-1-78-01-??-??-42101-11-06-*                                                                                  FAIL

1-12-0001-003-C-01-1-78-11-22-XX-42602-14-07-*                                                                           N/A
                                    00            3 0360   3 0345   3 0340   3 0335   3 0350   3 0375   3 0385   3 0760
                                                                                                          A        AM
                                    08            3 0900   3 0840   3 0400   3 0320   3 0340   3 0330   3 0370   3 0390
                                                    M        AM       A
                                    16            3 0380   3 0440   3 0385   3 0350   3 0335   3 0330   3 0340   3 0340

1-12-0001-003-C-01-1-78-11-??-??-42602-14-07-*                                                                                  FAIL

*  DECIMAL PT INDICATORS ARE LISTED WITH READINGS
** TEST CODES (PRINTED BELOW READINGS): A=ADJACENT HOURLY DIFFERENCE TEST, M=MAXIMUM VALUE TEST, S=SPIKE TEST
```

(Page 2 of 4)

Figure AHT2-4 - continued. Procedure AQRPM45 -- program ARPANOM

```
                               AQDHS-II ANOMALY SCREENING REPORT FOR DAILY READINGS                                      PAGE    1

------------- COLUMNS 1 THRU 32 --------------  -----  ----------------------------------------------------------------------------  ------
0 00 0000 001 1 11 1 11 11 12 22 22222 22 33 3                                                                                          SHEWHT
1 23 4567 890 1 23 4 56 78 90 12 34567 89 01 2  DAYS   READINGS(FORMAT IS N XXXX WHERE N=DECIMAL PT INDICATOR, XXXX=READING)  TEST
----------------------------------------------  -----  ----------------------------------------------------------------------------  ------

2-34-0001-004-A-06-8-77-01-**-00-11101-91-01-*   1- 8  0 0035   0 9999   0 9999   0 9999   0 9999   0 9999   0 0964   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 0025   0 9999   0 9999   0 9999
                                                17-20  0 9999   0 9999   0 9999   0 0000

2-34-0001-004-A-06-8-77-02-**-00-11101-91-01-*   1- 8  0 0455   0 0455   0 0455   0 0455   0 0455   0 0455   0 0455   0 0455   FAIL
                                                 9-16  0 0455   0 0455   0 0455   0 0065   0 0455   0 0455   0 0455   0 0455
                                                17-24  0 0455   0 0119   0 0455   0 0455   0 0455   0 0455   0 0455   0 0455

2-34-0001-003-A-06-8-76-12-**-00-42401-91-01-*   1- 8  0 1500   0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 9999   1 0000   0 9999   0 9999
                                                17-24  0 9999   0 9999   0 9999   1 0014   0 9999   0 9999   0 9999   0 9999
                                                25-26  0 9999   1 0000

2-34-0001-003-A-06-8-77-01-**-00-42401-91-01-*   1- 8  1 0000   0 1500   0 9999   0 9999   0 9999   0 9999   1 0000   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   1 0012   0 9999   0 9999   0 9999
                                                17-24  0 9999   0 9999   1 0038   0 9999   0 9999   0 9999   0 9999   0 9999
                                                25-31  1 0000   0 9999   0 9999   0 9999   0 9999   0 9999   1 0000

2-34-0001-003-A-06-8-77-02-**-00-42401-91-01-*   1- 8  0 9999   0 9999   0 9999   0 9999   0 9999   1 3613   0 9999   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   1 0000   0 9999   0 9999   0 9999   0 9999
                                                17-24  0 9999   1 0128   0 9999   0 9999   0 9999   0 9999   0 9999   1 0069

2-34-0001-003-A-06-8-77-03-**-00-42401-91-01-*   1- 8  0 9999   1 0113   0 9999   0 9999   0 9999   0 9999   0 9999   1 0074   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 9999   1 0076   0 9999   0 9999
                                                17-24  0 9999   0 9999   0 9999   1 0143   0 9999   0 9999   0 9999   0 9999
                                                25-26  0 9999   0 9450

2-37-0001-234-F-05-8-71-04-**-00-11101-91-01-*   1- 8  0 0060   0 9999   0 9999   0 9999   0 0070   0 0177   0 9999   0 0038   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   0 0083
                                                17-24  0 9999   0 9999   0 9999   0 9999   0 9999   0 9999   0 0051   0 9999
                                                25-27  0 9999   0 9999   0 0040

2-37-0001-234-F-05-8-71-06-**-00-11101-91-01-*   1- 8  0 9999   0 9999   0 9999   0 9999   0 0054   0 9999   0 9999   0 9999   FAIL
                                                 9-16  0 9999   0 9999   0 9999   0 9999   0 9999   0 0037   0 9999   0 9999
                                                17-24  0 9999   0 0052   0 9999   0 9999   0 0071   0 9999   0 9999   0 9999
                                                25-29  0 9999   0 0068   0 9999   0 9999   0 0045

2-37-0001-234-F-05-8-71-09-**-00-11101-91-01-*   1- 8  0 9999   0 0056   0 9999   0 0050   0 9999   0 9999   0 0057   0 9999   FAIL
                                                 9-16  0 0059   0 9999   0 9999   0 9999   0 9999   0 0074   0 9999   0 0044
                                                17-24  0 9999   0 0007   0 9999   0 9999   0 0034   0 9999   0 0035   0 9999
                                                25-30  0 0019   0 9999   0 9999   0 0034   0 9999   0 0039

2-37-0001-234-F-05-8-71-10-**-00-11101-91-01-*   1- 8  0 9999   0 0017   0 9999   0 9999   0 0070   0 9999   0 0052   0 9999   FAIL
                                                 9-16  0 0054   0 9999   0 9999   0 0043   0 9999   0 0050   0 9999   0 0020
                                                17-24  0 9999   0 9999   0 0011   0 9999   0 0035   0 9999   0 0037   0 9999
                                                25-30  0 9999   0 0037   0 9999   0 0023   0 9999   0 0032

*  DECIMAL PT INDICATORS ARE LISTED WITH READINGS
** DAY VARIES, VALID ENTRIES ARE 1 THRU 31
```

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Figure AHT2-4 - continued. Procedure AQRPM45 -- program ARPANOM

```
1100001001F021710605??424011107?                                               3
1100001001E0217106????424011107?                                               3
1120001003C011780415??421011105?                                               3
1120001003C0117804????421011105?                                               3
1120001003C011780131??421011106?                                               3
1120001003C0117801????421011106?                                               3
1120001003C011781122??426021407?                                               3
1120001003C0117811????426021407?                                               3
1120001003C011781230??426021407?                                               3
1120001003C0117812????426021407?                                               3
1120001003C011780625??442011401?                                               3
1340001001A061790328??424013101?                                               3
1340001001A0617403????424013101?                                               3
1340002001D051760105??424011407?                                               3
1340002001D051760106??424011407?                                               3
1340002001D0517601????424011407?                                               3
1340002001D051760223??424011407?                                               3
1340002001D051760224??424011407?                                               3
1340002001D051760301??424011407?                                               3
1340002001D051760302??424011407?                                               3
1340002001D0517603????424011407?                                               3
2340001004A0687701??00111019101?                                               3
2340001004A0687702??00111019101?                                               3
2340001003A0687612??00424019101?                                               3
2340001003A0687701??00424019101?                                               3
2340001003A0687702??00424019101?                                               3
2340001003A0687703??00424019101?                                               3
2370001234F0587104??00111019101?                                               3
2370001234F0587106??00111019101?                                               3
2370001234F0587109??00111019101?                                               3
2370001234F0587110??00111019101?                                               3
2370001234F0587111??00111019101?                                               3
2370001234F0587112??00111019101?                                               3
1373000998A051760729??442011107?                                               3
1373020996A051750803??442011107?                                               3
1373020996A051750805??442011107?                                               3
```

(Page 4 of 4)

Figure AHT2-4 - continued. Procedure AQRPM45 -- program ARPANOM

## AQDHS-II AD HOC TEST 3

## Produce an Inventory by Pollutant Report with Data from both the Archived and Active Master Files

In this test run, all hourly TSP and $SO_2$ data which are recorded in standard units and exceed the maximum values (2000 micrograms/cubic meter for TSP and 5240 micrograms/cubic meter for $SO_2$) are to be retrieved, regardless of whether the data are in the active master file or have been archived.

To accomplish this, the cataloged procedure AQRTM20 is used first to execute the retrieval language processor program, ARTLNGP (AQ0110); the COBOL compiler; and the linkage editor to create the generated retrieval program, ARTGENR (AQ0120). Then, the cataloged procedure AQRTM30 is used twice to execute ARTGENR (AQ0120) using two different input files: the archived master file and the active master file. The advantage of using these separate procedures instead of the single retrieval cataloged procedure, AQRTM10, is that the retrieval program does not have to be regenerated from the retrieval specifications each time a new master file is to be used. This test run also uses the cataloged procedure AQMSM10 to merge the two retrieved files by executing AMSMERG (AQ0210), the master file merge program. It also uses the cataloged procedure AQRPM40 to produce an inventory by pollutant of the merged file by executing ASRMSTR (AQ0140), the master file sort program, and ARPINVP (AQ0290), the inventory by pollutant report program.

The retrieval programs are discussed in Test 13. The master file merge program, AMSMERG (AQ0210), is discussed in Test 26. ASRMSTR (AQ0140) and ARPINVP (AQ0290) are both described in Test 8.

The retrieval request cards for this test run are in the AQDHS-II retrieval language. Also, the $$SELECT card contains the value RETRVR beginning in column 61. This specifies the name of the load module for the generated retrieval program when the procedure AQRTM20 is used to create and store this load module. When this field is used, the name specified must also be used for the substitutable parameter PGMSAVE in the cataloged procedure AQRTM20. If no value is placed in this keyword field of the $$SELECT statement, the default value of ARTGENR is used for the retrieval program name.

The run stream for this test run contains the JCL necessary for producing an inventory by pollutant report of data retrieved from both the archived and active master files. This run stream is shown in Figure AHT3-1.

The cataloged procedure AQRTM20 is executed in step A to generate the retrieval program load module which is named RETRVR by the specifications on the $$SELECT card and by the use of a substitutable parameter. The user must supply the DD information for the input retrieval specification cards in the COMPILE step. In this test run, the input retrieval specification cards will be used to produce a standard answer file containing all hourly TSP and $SO_2$ data which exceeded their maximum values and are recorded in standard units. Refer to Figure AHT3-2 for the sample output produced by this procedure.

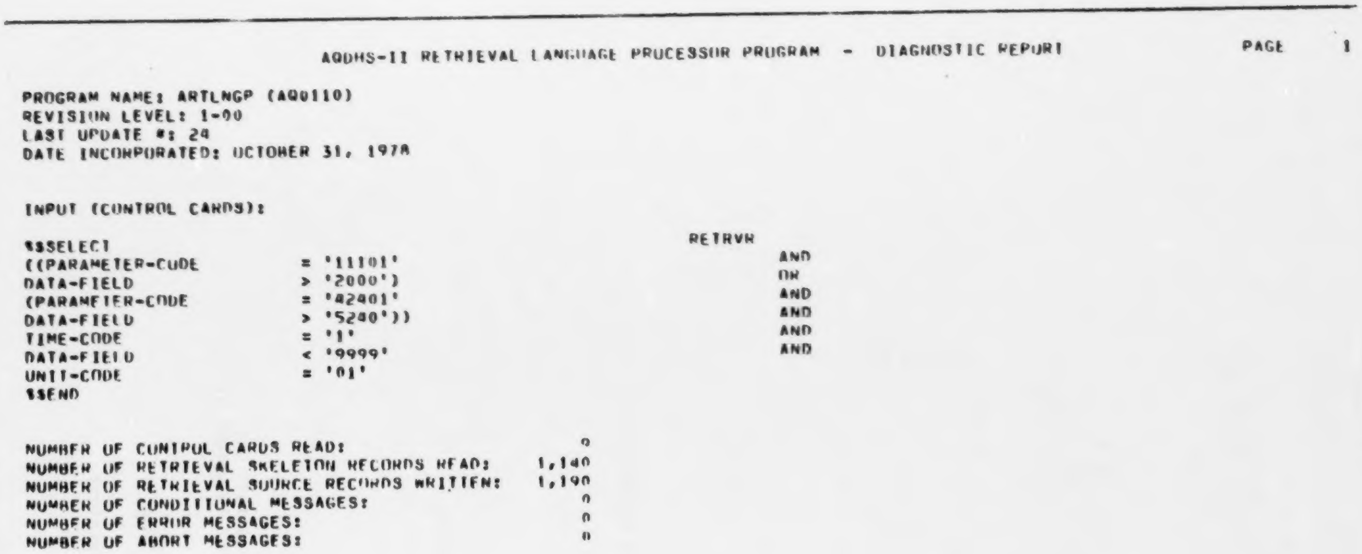
In steps B and C, the cataloged procedure AQRTM30 is used to execute the retrieval program load module, RETRVR, on both the archived master file AQARCM02 (created and stored on disk in Test 26) and the active master file AQMST04T (created and stored on disk in Test 26). The load module and the input master files are specified in this test run through the use of substitutable parameters. By the same method, the output answer file is named ARCHRETR in step B and ACTVRETR in step C. Sample outputs from step B and step C are shown in Figures AHT3-3 and AHT3-4, respectively.

Next, the run stream executes the cataloged procedure AQMSM10. Through the use of substitutable parameters, the input files to be merged are identified as ARCHRETR (created in step B) and ACTVRETR (created in step C), and the merged file is named MERGRETR. This file contains all the desired high readings for TSP and $SO_2$ regardless of whether the readings were taken before or after the archival cut off year. MERGRETR is established as a temporary file by specifying 'NEW,PASS' for the substitutable parameter DISP3. (The default value for DISP3 is 'NEW,CATLG,DELETE' which causes the merged file to be cataloged.) Figure AHT3-5 shows the sample output from this procedure.

In the last step, the inventory by pollutant report is generated by executing the cataloged procedure AQRPM40. Substitutable parameters are used in this step to specify MERGRETR (created in the above step) as the input master file, AQPARM01 (created and stored on disk in Test 1) as the input parameter file, and AQSITE01 (created and stored on disk in Test 2) as the input site file. The user must supply the DD information for the option card file in the SORT step. The option specified must be PARM. Refer to Figure AHT3-6 for the sample output produced by this procedure.

```
//ADHOC03 JOB RTI.C44,PO2443,MCMASTER,T=3,P=150,FORMS=FFWHITE
//*PROCLIB=RTI.C44,PO2069,MCMASTER.DPR.JCL
//KILL EXEC PGM=IEFBR14
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.MERGRETR,
//        DISP=(OLD,DELETE),
//DD1 DD DSN=RTI.C44.PU2069.MCMASTER.DPR.DATA.ACTVRETR,
// UNIT=DISK,VOL=(SER=(RTI111,RTI222,RTI666,RTI777)),DISP=(OLD,DELETE)
//DD1 DD DSN=RTI.C44.PO2069.MCMASTER.DPR.DATA.ARCHRETR,
// UNIT=DISK,VOL=(SER=(RTI111,RTI222,RTI666,RTI777)),DISP=(OLD,DELETE)
//*
//* THIS ADHOC TEST DEMONSTRATES THE CAPABILITY OF AQDHS-II
//* TO RUN THE SAME RETRIEVAL ON MORE THAN ONE FILE,
//* WITHOUT HAVING TO RECOMPILE THE RETRIEVAL SKELETON PROGRAM
//* EACH TIME; HERE THE SAME RETRIEVAL CRITERIA ARE USED TO OBTAIN DATA
//* FROM BOTH THE ARCHIVED FILE AND THE ACTIVE FILE; FINALLY A
//* PARAMETER INVENTORY IS PRODUCED FOR THESE RETRIEVED FILES
//*
//ADHOC03A EXEC AQRTM20,
//        PGMSAVE=RETRVR
//*
//* THE RETRIEVAL LANGUAGE SPECIFICATIONS CALL FOR HOURLY DATA
//* WITH ABNORMALLY HIGH READINGS FOR TSP AND SULFUR DIOXIDE;
//* THESE SPECIFICATIONS ARE INSERTED INTO THE RETRIEVAL SKELETON,
//* WHICH IS THEN COMPILED AND LINK-EDITED; THE RESULTING LOAD MODULE
//* IS CATALOGUED AND SAVED FOR LATER USE ON ANY MASTER-FORMAT FILE
//*
//COMPILE.INPUT DD *
$$SELECT                                                     RETRVR
((PARAMETER-CODE         = '11101'                                   AND
DATA-FIELD               > '2000')                                   OR
(PARAMETER-CODE          = '42401'                                   AND
DATA-FIELD               > '5240'))                                  AND
TIME-CODE                = '1'                                       AND
DATA-FIELD               < '9999'                                    AND
UNIT-CODE                = '01'
$$END
/*
//ADHOC03B EXEC AQRTM30,
//             PROGRAM=RETRVR,
//             MSTRFIL=AQARCM02,
//             ANSWRFL=ARCHRETR,
//             DISP='NEW,PASS',
//             PRIMARY=1,
//             SECNDRY=1
//*
//* THE PROGRAM 'RETRVR', CREATED IN STEP A,
//* IS EXECUTED TO RETRIEVE THE DESIRED DATA FROM THE ARCHIVED FILE
//*
//ADHOC03C EXEC AQRTM30,
//             PROGRAM=RETRVR,
//             MSTRFIL=AQMST04T,
//             ANSWRFL=ACTVRETR,
//             DISP='NEW,PASS',
//             PRIMARY=1,
//             SECNDRY=1
//*
//* THE RETRIEVAL LOAD MODULE 'RETRVR' IS EXECUTED AGAIN,
//* THIS TIME USING THE ACTIVE MASTER FILE
//*
//ADHOC03D EXEC AQMSM10,
//             DISP3='NEW,PASS',
//             INFILE1=ARCHRETR,
//             INFILE2=ACTVRETR,
//             NEWMSTR=MERGRETR,
//             PRI=1,
//             SEC=1
//*
//* THE 2 RETRIEVED FILES FROM STEPS B AND C ARE MERGED INTO ONE
//* MASTER-FORMAT FILE TO USE AS INPUT TO THE POLLUTANT INVENTORY STEP
//*
//ADHOC03E EXEC AQRPM40,
//             MSTRFIL=MERGRETR,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSITE01
//*
//* THE MERGED FILE IS USED TO PRODUCE A PARAMETER INVENTORY
//*
//SORT.OPTION DD *
      PARM
/*
```

Figure AHT3-1.  Run Stream



```
                              AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                 PAGE    1

PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


INPUT (CONTROL CARDS):

                                                                   RETRVR
$$SELECT                                                                 AND
((PARAMETER-CODE          = '11101'                                      OR
DATA-FIELD                > '2000')                                      AND
(PARAMETER-CODE           = '42401'                                      AND
DATA-FIELD                > '5240'))                                     AND
TIME-CODE                 = '1'                                          AND
DATA-FIELD                < '9999'
UNIT-CODE                 = '01'
$$END


NUMBER OF CONTROL CARDS READ:                         0
NUMBER OF RETRIEVAL SKELETON RECORDS READ:        1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:       1,190
NUMBER OF CONDITIONAL MESSAGES:                       0
NUMBER OF ERROR MESSAGES:                             0
NUMBER OF ABORT MESSAGES:                             0
```

Figure AHT3-2. Procedure AQRTM20 -- program ARTLNGP

```
                    AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     1

PROGRAM NAME: RETRVR  (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979

NUMBER OF MASTER FILE RECORDS READ:               42
NUMBER OF ANSWER FILE RECORDS WRITTEN:             2
NUMBER OF CONDITIONAL MESSAGES:                    0
NUMBER OF ABORT MESSAGES:                          0
```

Figure AHT3-3.  Procedure AQRTM30 -- program RETRVR

```
                         AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: RETRVR  (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979

NUMBER OF MASTER FILE RECORDS READ:              526
NUMBER OF ANSWER FILE RECORDS WRITTEN:             2
NUMBER OF CONDITIONAL MESSAGES:                    0
NUMBER OF ABORT MESSAGES:                          0
```

Figure AHT3-4. Procedure AQRTM30 -- program RETRVR

```
                                AQDMS-II MASTER FILE MERGE PROGRAM  -  DIAGNOSTIC REPORT                          PAGE  1

PROGRAM NAME: AMSMERG (AQ0210)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

INPUT FILE 1 CONTAINS:              2 RECORDS
INPUT FILE 2 CONTAINS:              2 RECORDS
OUTPUT FILE CONTAINS:               4 RECORDS
```

Figure AHT3-5. Procedure AQMSM10 -- program AMSMERG

```
                        AQDHS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE     1

PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


SORT OPTION SPECIFIED:       PARM



NUMBER OF INPUT RECORDS READ:             4
NUMBER OF MASTER RECORDS WRITTEN:         4
NUMBER OF DIAGNOSTIC MESSAGES:            0
```

(Page 1 of 2)

Figure AHT3-6. Procedure AQRPM40 -- program ASRMSTR

```
                                      AIR QUALITY DATA REPORT - INVENTORY BY POLLUTANT                                    PAGE    1

------------------------------------------------------------------------------------------------------------------------------------
PUL-MTH           POLLUTANT             STATE-AQCR-CNTY- AG-            SITE                YEAR TIME UNIT   NUM    MIN     MAX   ARITH
 CODE               NAME                AREA-SITE CODES  PRJ           ADDRESS                   CODE CODE   OBS    OBS     OBS    MEAN
------------------------------------------------------------------------------------------------------------------------------------

1110191  TOTAL SUSPENDED PARTICULATE    3416909600001001 A06          YADKIN ROAD           1965   1   01      8  1.000   9021.  2130.5
                                                                                            1979   1   01     16  1.000   9021.  1068.0

4240131        SULFUR DIOXIDE           3416909600001001 A06          YADKIN ROAD           1965   1   01      3  37.00   9928.  3334.0
                                                                                            1979   1   01      3  37.00   9928.  3334.0



------------------------------------------------------------------------------------------------------------------------------------


                                      INVENTORY BY POLLUTANT PROGRAM - DIAGNOSTIC REPORT                                  PAGE    1

PROGRAM NAME: ARPINVP (AQ0290)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

NUMBER OF INPUT RECORDS:          4
NUMBER OF REPORT PAGES:           1
NUMBER OF ABORT MESSAGES:         0
```

(Page 2 of 2)

Figure AHT3-6 - continued. Procedure AQRPM40 -- program ARPINVP

## AQDHS-II AD HOC TEST 4

## Produce a Detailed Report in User Units Containing Data Retrieved from the Master File

This test incorporates the first use in the test run series of the user units fields in the parameter file. The cataloged procedure AQRTM10 is executed first. AQRTM10 executes the retrieval language processor program, ARTLNGP (AQ0110); the COBOL compiler; the linkage editor, and the generated retrieval program ARTGENR (AQ0120). Next, the cataloged procedure AQCVM20 is used to execute ACVUNIT (AQ0050), the units code conversion program. And finally, the cataloged procedure AQRPM20 is used to produce a detailed report by executing ARPMSTR (AQ0230), the master file detailed report program.

The retrieval programs are described in Test 13. ACVUNIT (AQ0050) is described in Test 20 and ARPMSTR (AQ0230) is described in Test 6.

The run stream for this test run contains the JCL necessary for producing a detailed report of data retrieved from the master file and then converted into user units. This run stream is shown in Figure AHT4-1.

First, the run stream executes the cataloged procedure AQRTM10 to obtain a retrieval. Substitutable parameters are used to specify AQMST04T (created and stored on disk in Test 26) as the input master file, and TEMPRETR as the output answer file. The user must supply the DD information for the input retrieval specification cards in the COMPILE step. In test run, these cards are used to produce a standard answer file containing all $NO_2$ and $NO_x$ data from 1979 in the master file. Refer to Figure AHT4-2 for the sample output produced by this procedure.

Next, the run stream executes the cataloged procedure AQCVM20. By using substitutable parameters, the input master file is specified as TEMPRETR (created by the first procedure of this test), the input parameter file is specified as AQPARM01 (created and stored on disk in Test 1), and the output answer file is named UNITCONV. All the readings in this answer file have been converted to the units of parts per billion (the user units specified in the parameter file AQPARM01). The user must supply the DD information for the option card file. The option specified in the CONV step of this test run is USER. Figure AHT4-3 shows the output produced by this procedure.

Finally, the cataloged procedure AQRPM20 is executed to produce a detailed report. Substitutable parameters indicate UNITCONV (created by the above procedure) as the input master file, AQPARM01 (created and stored in Test 1) as the input parameter file, AQSTESRT (created and stored on disk in Test 6) as the input site file, and AQSTND01 (created and stored on disk in Test 3) as the input parameter standards file. The user must supply the DD information for the option card file. The options specified in the CONV step of this test run are SUM and DISPLAY > -10. The sample output produced by this procedure is shown in Figure AHT4-4.

```
//EPALMH04 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* THIS TEST RETRIEVES NITROGEN DIOXIDE AND OXIDES OF NITROGEN,
//* CONVERTS THE RETRIEVED DATA FROM THE UNITS IN THE KEY TO
//* THE USER UNITS, AND PRODUCES A DETAILED LIST OF THE RESULTING FILE
//*
//ADHOC04A EXEC AQRTM10,
//              MSTRFIL=AQMST04T,
//              ANSWRFL=TEMPRETR,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* THE RETRIEVAL IS PERFORMED USING RETRIEVAL LANGUAGE
//* SPECIFICATIONS
//*
//COMPILE.INPUT DD *
$$SELECT
YEAR                      = '79'                               AND
(PARAMETER-CODE           = '42602'                            OR
PARAMETER-CODE            = '42603')
$$END
/*
//ADHOC04B EXEC AQCVM20,
//              MSTRFIL=TEMPRETR,
//              ANSWRFL=UNITCONV,
//              PARMFIL=AQPARM01,
//              DISP='NEW,PASS',
//              PRIMARY=1,
//              SECNDRY=1
//*
//* CONVERT THE DATA IN THE RETRIEVED FILE TO USER UNITS
//* (AS SPECIFIED IN THE OPTION CARD)
//*
//CONV.OPTIONS DD *
USER
/*
//ADHOC04C EXEC AQRPM20,
//              MSTRFIL=UNITCONV,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSTESRT,
//              STANFIL=AQSTND01
//*
//* LIST THE CONTENTS OF THE CONVERTED FILE WITH A SUM,
//* RATHER THAN A MEAN, OPTION AND WITH A NEGATIVE DISPLAY CRITERION
//*
//REPORT.OPTIONS DD *
SUM DISPLAY > -10
/*
```

Figure AHT4-1. Run Stream

```
                         AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT              PAGE     1

PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


INPUT (CONTROL CARDS):

$$SELECT
YEAR                    = '79'                                   AND
(PARAMETER-CODE         = '42602'                                OR
PARAMETER-CODE          = '42603')
$$END


NUMBER OF CONTROL CARDS READ:                  5
NUMBER OF RETRIEVAL SKELETON RECORDS READ:     1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:    1,183
NUMBER OF CONDITIONAL MESSAGES:                0
NUMBER OF ERROR MESSAGES:                      0
NUMBER OF ABORT MESSAGES:                      0




---------------------------------------------------------------------------------------------------------------------



                           AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                      PAGE     1

PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979


NUMBER OF MASTER FILE RECORDS READ:                 526
NUMBER OF ANSWER FILE RECORDS WRITTEN:               24
NUMBER OF CONDITIONAL MESSAGES:                       0
NUMBER OF ABORT MESSAGES:                             0
```

Figure AHT4-2. Procedure AQRTM10 -- programs ARTLNGP and ARTGENR

```
                                   AQDHS-II UNITS CODE CONVERSION PROGRAM  -  DIAGNOSTIC REPORT              PAGE     1
 PROGRAM NAME: ACVUNIT (AQ0050)
 REVISION LEVEL: 1-00
 LAST UPDATE #: 24
 INCORPORATED: OCTOBER 31, 1978

    OPTION IS USER

 NUMBER OF INPUT RECORDS:                           24
 NUMBER OF OUTPUT RECORDS:                          24
 NUMBER OF ERRORS DETECTED:                          0
 NUMBER OF READINGS CONVERTED:                      48
 NUMBER OF READINGS TOO LARGE:                       0
 NUMBER OF READINGS TOO SMALL:                       0
 NUMBER OF RECORDS WITH READINGS CONVERTED:         24
 NUMBER OF RECORDS WITH READINGS TOO LARGE:          0
 NUMBER OF RECORDS WITH READINGS TOO SMALL:          0
```

Figure AHT4-3. Procedure AQCVM20 -- program ACVUNIT

```
                        AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                     PAGE    1

PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

USER-SPECIFIED OPTION: SUM DISPLAY > -10


NUMBER OF OPTION STATEMENTS READ:                    2
NUMBER OF MASTER FILE RECORDS READ:                 24
NUMBER OF REPORT PAGES WRITTEN:                      2
NUMBER OF ERRORS DETECTED:                           0
```

(Page 1 of 2)

Figure AHT4-4. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                     AQDHS-II AIR QUALITY DATA REPORT                                          PAGE     1
                                                         DISPLAY  >-10

AUCR:    169      AGENCY:    EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:                                YEAR:  1979
COUNTY: 0960      PROJECT:   EPISODE MONITORING                     ANALYSIS METHOD:                                MONTH:  FEBRUARY
AREA:   0001      PARAMETER:                                        SAMPLING INTERVAL: 12 HOURS                     MIN DET:
SITE:    001      UNITS:                                            SAROAD KEY:          340001001A0616             UNITS CODE: 08
YADKIN ROAD                                                         KEY-1: 341690960000001001A06779 KEY-2: 426028208 KEY-3: 020106
                                      PRIMARY                                                 SECONDARY
FEDERAL STANDARD      100 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN                 100 UG/M3 (25 C), ANNUAL ARITHMETIC MEAN
STATE STANDARD         90 UG/M3 (0 C) ANNUAL ARITHMETIC MEAN                    90 UG/M3 (0 C) ANNUAL ARITHMETIC MEAN

          HOUR

DAY      06        18     NO.      SUM

01     10.00     10.00     2     20.0000
02                         0
03     10.00     10.00     2     20.0000
04                         0
05     20.00     20.00     2     40.0000
06                         0
07     30.00     30.00     2     60.0000
08                         0
09                         0
10                         0
11                         0
12                         0
13                         0
14     50.00     50.00     2     100.000
15                         0
16                         0
17                         0
18                         0
19                         0
20     80.00     80.00     2     160.000
21                         0
22     130.0     130.0     2     260.000
23                         0
24     210.0     210.0     2     420.000
25     330.0     330.0     2     660.000
26     40.00     40.00     2     80.0000
27     370.0     370.0     2     740.000
28     410.0     410.0     2     820.000
```

(Page 2 of 2)

Figure AHT4-4 - continued. Procedure AQRPM20 -- program ARPMSTR

## AQDHS-II AD HOC TEST 5

### Produce a Sliding Average Report

Ad Hoc Test 5 generates a sliding average report of 1979 sulfur dioxide hourly data using the SAROAD criterion for averaging. To accomplish this, the retrieval programs are executed by the cataloged procedure AQRTM10. The cataloged procedure AQSTM20 is then used to execute ASTSLAV (AQ0180), the sliding average program. The sliding average report is produced using the cataloged procedure AQRPM20 to execute ARPMSTR (AQ0230), the master file detailed report program.

Test 13 provides a description of the programs executed by the retrieval procedure. ADQHS-II retrieval language specifications are used in this test run. The special keyword, SLIDING, appears on the $$SELECT card beginning in column 25; this creates a sliding average answer file rather than a standard answer file.

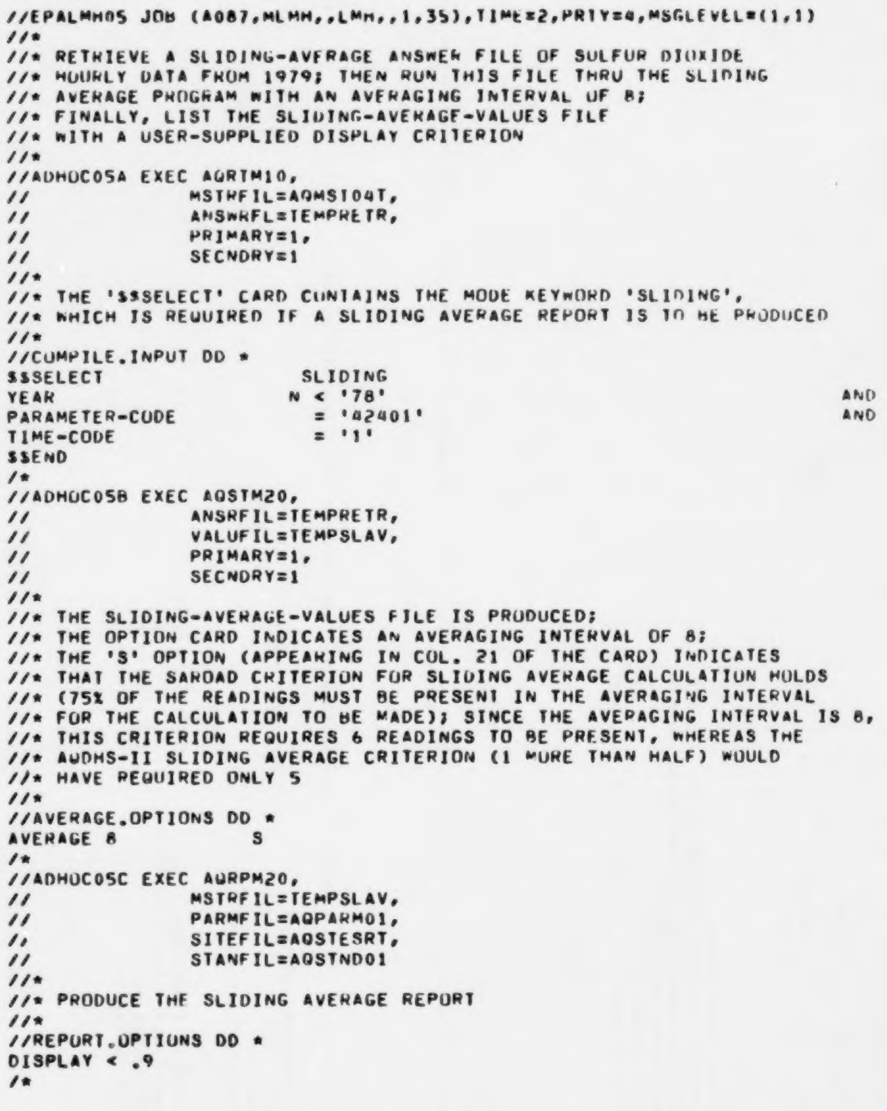
The sliding average program, ASTSLAV (AQ0180), is discussed in Test 21. The present test uses the SAROAD criterion for averaging. This criterion requires that 75% of the readings in an averaging interval be present for an average to be calculated. In this test, where an interval of 8 readings is specified, the 75% minimum translates into 6 readings. Under the regular AQDHS-II criterion, only 5 readings (one more than half) would be needed to calculate an average.

Test 21 describes the detailed report program, ARPMSTR (AQ0230).

The run stream for Ad Hoc Test 5 appears in Figure AHT5-1. First, the cataloged procedure AQRTM10 is executed to retrieve all hourly 1979 sulfur dioxide data from the active master file, AQMST04T (created and stored on disk in Test 26). The user must supply the DD information for the input retrieval specification cards. Figure AHT5-2 shows the sample output produced by this procedure.

Next, the cataloged procedure AQSTM20 is executed using the sliding average answer file TEMPRTR (created by the first procedure in this test) as input. The option card in this step indicates an averaging interval of 8; it also has an S in column 21, which specifies that the SAROAD averaging criterion is to be used. The user must supply the DD information for this option card in the AVERAGE step. Figure AHT5-3 shows the sample output from this procedure.

Finally, a sliding average report is produced by executing the cataloged procedure AQRPM20. The input files are TEMPSLAV (created by the above procedure), AQPARM01, AQSITE01 and AQSTND01. The last three files were created in Tests 1, 2, and 3, respectively. The user must supply the DD information for the option card file in the REPORT step. The option card for the master file report program shows a display criterion of DISPLAY < 0.9. Sample output produced by this procedure is shown in Figure AHT5-4.



```
//EPALMH05 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* RETRIEVE A SLIDING-AVERAGE ANSWER FILE OF SULFUR DIOXIDE
//* HOURLY DATA FROM 1979; THEN RUN THIS FILE THRU THE SLIDING
//* AVERAGE PROGRAM WITH AN AVERAGING INTERVAL OF 8;
//* FINALLY, LIST THE SLIDING-AVERAGE-VALUES FILE
//* WITH A USER-SUPPLIED DISPLAY CRITERION
//*
//ADHOC05A EXEC AQRTM10,
//              MSTRFIL=AQMSI04T,
//              ANSWRFL=TEMPRETR,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* THE '$$SELECT' CARD CONTAINS THE MODE KEYWORD 'SLIDING',
//* WHICH IS REQUIRED IF A SLIDING AVERAGE REPORT IS TO BE PRODUCED
//*
//COMPILE.INPUT DD *
$$SELECT                 SLIDING
YEAR                   N < '78'                                     AND
PARAMETER-CODE           = '42401'                                  AND
TIME-CODE                = '1'
$$END
/*
//ADHOC05B EXEC AQSTM20,
//              ANSRFIL=TEMPRETR,
//              VALUFIL=TEMPSLAV,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* THE SLIDING-AVERAGE-VALUES FILE IS PRODUCED;
//* THE OPTION CARD INDICATES AN AVERAGING INTERVAL OF 8;
//* THE 'S' OPTION (APPEARING IN COL. 21 OF THE CARD) INDICATES
//* THAT THE SAROAD CRITERION FOR SLIDING AVERAGE CALCULATION HOLDS
//* (75% OF THE READINGS MUST BE PRESENT IN THE AVERAGING INTERVAL
//* FOR THE CALCULATION TO BE MADE); SINCE THE AVERAGING INTERVAL IS 8,
//* THIS CRITERION REQUIRES 6 READINGS TO BE PRESENT, WHEREAS THE
//* AQDMS-II SLIDING AVERAGE CRITERION (1 MORE THAN HALF) WOULD
//* HAVE REQUIRED ONLY 5
//*
//AVERAGE.OPTIONS DD *
AVERAGE 8           S
/*
//ADHOC05C EXEC AQRPM20,
//              MSTRFIL=TEMPSLAV,
//              PARMFIL=AQPARM01,
/,              SITEFIL=AQSTESRT,
//              STANFIL=AQSTND01
//*
//* PRODUCE THE SLIDING AVERAGE REPORT
//*
//REPORT.OPTIONS DD *
DISPLAY < .9
/*
```

Figure AHT5-1. Run Stream

```
                    AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT              PAGE     1

PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

INPUT (CONTROL CARDS):

$$SELECT               SLIDING
YEAR                  N < '78'                          AND
PARAMETER-CODE          = '42401'                       AND
TIME-CODE               = '1'
$$END

NUMBER OF CONTROL CARDS READ:                      5
NUMBER OF RETRIEVAL SKELETON RECORDS READ:     1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:    1,183
NUMBER OF CONDITIONAL MESSAGES:                    0
NUMBER OF ERROR MESSAGES:                          0
NUMBER OF ABORT MESSAGES:                          0

---------------------------------------------------------------------------------------------------------

                       AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                  PAGE     1

PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 24
DATE INCORPORATED: DECEMBER 28, 1979

NUMBER OF MASTER FILE RECORDS READ:                  526
NUMBER OF ANSWER FILE RECORDS WRITTEN:                11
NUMBER OF CONDITIONAL MESSAGES:                        0
NUMBER OF ABORT MESSAGES:                              0
```

Figure AHT5-2. Procedure AQRTM10 -- programs ARTLNGP and ARTGENR

```
                    AQDHS-II SLIDING AVERAGE PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     1
PROGRAM NAME: ASTSLAV (AQ0180)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

OPTIONS IN EFFECT: AVERAGE 8          S


NUMBER OF SLIDING AVERAGE ANSWER RECORDS READ:           11
NUMBER OF SLIDING AVERAGE VALUE RECORDS WRITTEN:          7
NUMBER OF ERRORS DETECTED:                                0
```

Figure AHT5-3. Procedure AQSTM20 -- program ASTSLAV

```
                    AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1
PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

USER-SPECIFIED OPTION: DISPLAY < .9


NUMBER OF OPTION STATEMENTS READ:                        1
NUMBER OF MASTER FILE RECORDS READ:                      7
NUMBER OF REPORT PAGES WRITTEN:                          8
NUMBER OF ERRORS DETECTED:                               0
```

(Page 1 of 2)

Figure AHT5-4. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  HAWAII (12)                    AQDMS-II AIR QUALITY DATA REPORT - SLIDING AVERAGE INTERVAL =  8                       PAGE     3
                                                                    DISPLAY  <.9

AQCR:    060      AGENCY:     EPA - EFFECTS RESEARCH                  COLLECTION METH:    DAVIS INSTRUMENT            YEAR:  1979
COUNTY: 0080      PROJECT:    POPULATION-ORIENTED SURV.               ANALYSIS METHOD:    SEQUENTIAL-CONDUCTOMETRIC   MONTH:  JANUARY
AREA:    0001     PARAMETER: SULFUR DIOXIDE                           SAMPLING INTERVAL: 01 HOURS                     MIN DET:   28.6
SITE:    001      UNITS:      U-GMS/M3 (0DEG C, 1013 M-BARS)          SAROAD KEY:         120001001C0106              UNITS CODE: 02
MOUNTAIN ROAD, HILO, HAWAII CO.                 HONOLULU              KEY-1: 1206000800001001C01179 KEY-2: 424013302 KEY-3: 010100
                                               PRIMARY                                                SECONDARY
FEDERAL STANDARD      365 UG/M3 (25 C)  24 HOUR MAXIMUM, 1 PER YEAR              1300 UG/M3 (0 C), 3 HR. MAX.,1 PER YR
STATE STANDARD         60 UG/M3 (25 C)  ANNUAL ARITHMETIC MEAN                   0.4 PARTS/MILLION,  3 HR.MAX, 1 PER YEAR


                                                    HOUR

DAY      00        01        02        03        04        05        06        07        08        09        10        11

01     .0000     .0125     .0125     .0125     .0125     .0125     .0125     .0125     .0125     .0125     .0625     .1125
02     .1000     .0375     .0125     .0000     .0000     ***       ***       ***       ***       ***       ***       ***
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31     ***       ***       ***       ***       ***       .6000     .6000     .6000     .6375     .7125     .7750     .8500

*** INDICATES SLIDING AVERAGE VALUE NOT COMPUTED DUE TO INSUFFICIENT NUMBER OF READINGS IN FILE.
BLANK INDICATES SLIDING AVERAGE VALUE DID NOT MEET DISPLAY CRITERIA OR DID NOT MEET SELECTION CRITERIA.
```

(Page 2 of 2)

Figure AHT5-4 - continued. Procedure AQRPM20 -- program ARPMSTR

## AQDHS-II AD HOC TEST 6

## Use Batched Retrievals in Generating a Statistical Analysis Report Ordered by Parameter

This is the first example of batched retrievals in the test run series. First, the retrieval procedure, AQRTM10, is executed with batch retrievals. Then the master file sort procedure, AQSRM10, is executed to sort the answer file passed from the retrieval step. The statistical analysis procedure, AQRPM10, then follows, with the sorted file as input.

The retrieval programs executed by AQRTM10 are described in Test 13. To batch retrievals, each retrieval is preceeded by a $$SELECT card and one $$END card follows all the retrievals. The batched retrievals are used as input to the retrieval language processor program, ARTLNGP (AQ0110). In this run, three retrievals are batched: one for particulate data, a second for sulfur dioxide data, and a third for oxides of nitrogen data.

The master file sort program, ASRMSTR (AQ0140), is described in Test 8. An answer file produced by batched retrievals should always be sorted by ASRMSTR (AQ0140) using the BATCH option to group the records selected by each retrieval together. In this run, the STAT option is also specified because the answer file is to be used to produce a statistical analysis report.

Test 10 provides a description of the statistical analysis programs: ASTPRLM (AQ0190), ASTMSST (AQ0200), and ARPMSST (AQ0270).

The run stream for Ad Hoc Test 6 appears in Figure AHT6-1. Step A executes the retrieval procedure, AQRTM10, using as input the active master file AQMST04T (created and stored on disk in test 26) and producing an answer file named TEMPRETR. Sample output from this step is shown in Figure AHT6-2. Step B executes the master file sorting procedure, AQSRM10, with the answer file TEMPRETR as input and the output sorted file named TEMPSORT. Two options are specified on the option card in this step: BATCH, beginning in column 1, and STAT, beginning in column 7. Sample output from this step is shown in

Figure AHT6-3. The statistical analysis procedure AQRPM10, is executed last, using the QUARTER option for the preliminary statistics program and a line-per-page maximum of 60 for the statistical report program. Sample output from this step is shown in Figure AHT6-4.

Note that the statistical analysis report generated in this run is ordered by parameter because 1) each of the batched retrievals selected records for a given parameter and 2) the BATCH option in ASRMSTR (AQ0140) caused the records selected by each of the retrievals to be grouped together. If one retrieval had been used in the retrieval step (the BATCH option would therefore not be used in the sort step), the statistical analysis report would have been ordered by site.

```
//EPALMH06 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* RUN A BATCH RETRIEVAL ON THE MASTER FILE, RETRIEVING FIRST
//* CERTAIN TSP DATA, SECOND CERTAIN SULFUR DIOXIDE DATA,
//* AND THIRD CERTAIN OXIDES OF NITROGEN DATA;  PRODUCE A STATISTICAL
//* REPORT FROM THIS ANSWER FILE
//*
//ADHOC06A EXEC AQRTM10,
//             MSTRFIL=AQMST04T,
//             ANSWRFL=TEMPRETR,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* A BATCH RETRIEVAL IS GENERATED WITH MULTIPLE SETS OF RETRIEVAL
//* SPECIFICATIONS; EACH SET OF SPECIFICATIONS IS SEPARATED FROM THE
//* OTHERS BY ITS OWN '$$SELECT' CARD
//*
//COMPILE.INPUT DD *
$$SELECT
YEAR                        = '79'                         AND
MONTH                       < '04'                         AND
PARAMETER-CODE              = '11101'                      AND
TIME-CODE                   = '1'
$$SELECT
YEAR                        = '79'                         AND
MONTH                       < '04'                         AND
PARAMETER-CODE              = '42401'                      AND
TIME-CODE                   = '1'
$$SELECT
YEAR                        = '79'                         AND
MONTH                       < '04'                         AND
PARAMETER-CODE              = '42603'
$$END
/*
//ADHOC06B EXEC AQSRM10,
//             MSTRFIL=TEMPRETR,
//             SORTFIL=TEMPSORT,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* SORT THE RETRIEVED FILE USING THE 'BATCH' AND 'STAT' OPTIONS;
//* THE BATCH RETRIEVAL IN STEP A MERELY RETRIEVES ALL RECORDS FITTING
//* ANY OF THE SPECIFICATION SETS, KEEPING THE RECORDS IN NORMAL
//* MASTER FILE ORDER; THE BATCH SORT REORDERS THE RECORDS INTO THE
//* SAME SEQUENCE AS THAT IN WHICH THE ASSOCIATED RETRIEVAL SPECIFICATION
//* SETS OCCUR IN STEP A (ALL TSP DATA FIRST, THEN SULFUR DIOXIDE
//* DATA, AND FINALLY OXIDES OF NITROGEN DATA).
//*
//SORT.OPTIONS DD *
BATCH STAT
/*
//ADHOC06C EXEC AQRPM10,
//             MSTRFIL=TEMPSORT,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSTESRT,
//             PRI1=1,
//             SEC1=1,
//             PRI2=1,
//             SEC2=1
//*
//* USING THE SORTED RETRIEVED FILE, CREATE THE PRELIMINARY
//* STATISTICS FILES (TEMPORARY) USING THE QUARTER
//* OPTION, GENERATE THE STATISTICAL ANALYSIS FILE (TEMPORARY), AND
//* PRODUCE THE STATISTICAL REPORT
//*
//PRELIM.OPTIONS DD *
QUARTER
/*
//PRINTS.OPTIONS DD *
     60
```

Figure AHT6-1.  Run Stream

```
                         AQDMS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                  PAGE    1

PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

INPUT (CONTROL CARDS):

$$SELECT
YEAR                         = '79'                                AND
MONTH                        < '04'                                AND
PARAMETER-CODE               = '11101'                             AND
TIME-CODE                    = '1'
$$SELECT
YEAR                         = '79'                                AND
MONTH                        < '04'                                AND
PARAMETER-CODE               = '42401'                             AND
TIME-CODE                    = '1'
$$SELECT
YEAR                         = '79'                                AND
MONTH                        < '04'                                AND
PARAMETER-CODE               = '42603'
$$END

NUMBER OF CONTROL CARDS READ:                       15
NUMBER OF RETRIEVAL SKELETON RECORDS READ:       1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:      1,255
NUMBER OF CONDITIONAL MESSAGES:                      0
NUMBER OF ERROR MESSAGES:                            0
NUMBER OF ABORT MESSAGES:                            0


-----------------------------------------------------------------------------------------------------------------


                            AQDMS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979

NUMBER OF MASTER FILE RECORDS READ:                    526
NUMBER OF ANSWER FILE RECORDS WRITTEN:                  26
NUMBER OF CONDITIONAL MESSAGES:                          0
NUMBER OF ABORT MESSAGES:                                0
```

Figure AHT6-2. Procedure AAQRM10 -- programs ARTLNGP and ARTGENR

```
                 AQDHS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

SORT OPTION SPECIFIED: BATCH STAT


NUMBER OF INPUT RECORDS READ:             26
NUMBER OF MASTER RECORDS WRITTEN:         26
NUMBER OF DIAGNOSTIC MESSAGES:             0
```

Figure AHT6-3. Procedure AQSRM10 -- program ASRMSTR

```
                 AQDHS-II PRELIMINARY STATISTICS PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ASTPRLM (AQ0190)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: DEFAULT (TOTAL)


NUMBER OF MASTER FILE RECORDS READ:                         26
NUMBER OF MASTER FILE RECORDS WITH COMPOSITE DATA:           0
NUMBER OF PARAMETER FILE RECORDS READ:                      89
NUMBER OF STATISTICS RAW DATA FILE RECORDS WRITTEN:         42
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS WRITTEN:       6
NUMBER OF DIAGNOSTIC MESSAGES:                               0




--------------------------------------------------------------------------------------------------------



                  AQDHS-II STATISTICAL ANALYSIS PROGRAM  -  DIAGNOSTIC REPORT                       PAGE 1
PROGRAM NAME: ASTMSST (AQ0200)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF STATISTICS RAW DATA FILE RECORDS READ:        42
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS READ:      6
NUMBER OF STATISTICS FILE RECORDS WRITTEN:              12
```

(Page 1 of 4)

Figure AHT6-4. Procedure AQRPM10 -- programs ASTPRLM and ASTMSST

```
                    AQDHS-II STATISTICAL ANALYSIS REPORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM-NAME: ARPMSST (AQ0270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTION CARD IMAGE:       60
                              *** ARPMSST 005 WARNING - COLUMN 1 - INVALID OR MISSING SITE BREAK OPTION - FULL BREAK OPTION USED

PRINTING OPTIONS CHOSEN ARE FULL  SITE BREAK AND 60 LINES PER PAGE




-------------------------------------------------------------------------------------------------------------------------


                                          AQDHS-II STATISTICAL ANALYSIS REPORT                                  PAGE    1
                                            ANALYSIS FOR TOTAL TIME PERIOD
                                             STATE (34): NORTH CAROLINA

SITE CODE: 34-0001-001-A-06       AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 0960
AGENCY/PROJECT: A06       SITE ADDRESS: YADKIN ROAD                                     CITY:

------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                    METHOD OF COLLECTION AND ANALYSIS                    INTERVAL    UNITS                TIMES
POLLUTANT-METHOD-INTERVAL-UNITS CODE      SAMPLING DATES                                                                HALF
        PCT   NBR   MIN   MIN                       PERCENTILES                MAX    2ND    3RD    ARIT   ARIT    GEOM   GEOM   M DET
        OBS   OBS  DETEC  OBS      10    30    50    70    90    95    99      OBS    MAX    MAX    MEAN  ST DEV   MEAN  ST DEV  SUB
------------------------------------------------------------------------------------------------------------------------
TOTAL SUSPENDED PARTICULATE       HI-VOL                 - GRAVIMETRIC                 HOURLY      U-GMS/M3 (25DEG C,1013 M-BARS)
11101-91-1-01                          01/01/79 TO 01/31/79
        12.9    96  1.000 1.000     2.    6.   15.   23.   40.   42. 9021.  9021.  8003.  45.00   193.9  1221.   12.88 4.063      0
```

(Page 2 of 4)

Figure AHT6-4. Procedure AQRPM10 -- program ASTMSST

```
                                         AQDHS-II STATISTICAL ANALYSIS REPORT                                     PAGE      2
                                            ANALYSIS FOR TOTAL TIME PERIOD
                                               STATE (12): HAWAII

SITE CODE: 12-0001-001-C-01       AGENCY TYPE: EPA - EFFECTS RESEARCH           COUNTY: 0080
AGENCY/PROJECT: C01       SITE ADDRESS: MOUNTAIN ROAD, HILO, HAWAII CO.                  CITY: HONOLULU

------------------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                   METHOD OF COLLECTION AND ANALYSIS                               INTERVAL    UNITS                  TIMES
POLLUTANT-METHOD-INTERVAL-UNITS CODE      SAMPLING DATES                                                                            HALF
        PCT    NBR   MIN    MIN                      PERCENTILES                  MAX     2ND    3RD     ARIT   ARIT     GEOM   GEOM   M DET
        OBS    OBS  DETEC   OBS      10     30     50     70     90     95     99     OBS     MAX    MAX     MEAN  ST DEV   MEAN  ST DEV  SUB
------------------------------------------------------------------------------------------------------------------------------------
SULFUR DIOXIDE                   DAVIS INSTRUMENT          - SEQUENTIAL-CONDUCTOMETRIC   HOURLY      U-GMS/M3 (0DEG C, 1013 M-BARS)
42401-33-1-02                           01/01/79 TO 02/03/79
        13.4   109  28.60 0.0        0.0    0.3    0.6    0.8    1.1    1.3    1.4  1.400   1.400  1.300    14.29  0.058    14.29  1.008    109



------------------------------------------------------------------------------------------------------------------------------------



                                         AQDHS-II STATISTICAL ANALYSIS REPORT                                     PAGE      3
                                            ANALYSIS FOR TOTAL TIME PERIOD
                                               STATE (34): NORTH CAROLINA

SITE CODE: 34-0001-001-A-06       AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 0960
AGENCY/PROJECT: A06       SITE ADDRE 3: YADKIN ROAD                                     CITY:

------------------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                   METHOD OF COLLECTION AND ANALYSIS                               INTERVAL    UNITS                  TIMES
POLLUTANT-METHOD-INTERVAL-UNITS CODE      SAMPLING DATES                                                                            HALF
        PCT    NBR   MIN    MIN                      PERCENTILES                  MAX     2ND    3RD     ARIT   ARIT     GEOM   GEOM   M DET
        OBS    OBS  DETEC   OBS      10     30     50     70     90     95     99     OBS     MAX    MAX     MEAN  ST DEV   MEAN  ST DEV  SUB
------------------------------------------------------------------------------------------------------------------------------------
SULFUR DIOXIDE                   DAVIS INSTRUMENT          - HYDROGEN PEROXIDE           HOURLY      U-GMS/M3 (25DEG C,1013 M-BARS)
42401-31-1-01                           03/28/79 TO 03/28/79
        12.5     3  26.20 37.00      37.    37.    37. 9928.  9928.  9928.  9928.  9928.   37.00  37.00    3334.  5710.    238.6  25.24      0

OXIDES OF NITROGEN               INSTRUMENTAL              - CHEMILUMINESCENCE           12 HOURS    PARTS PER MILLION (VOL/VOL)
42603-14-7-07                           02/01/79 TO 02/28/79
        42.9    24  0.010 0.010      0.01   0.03   0.05   0.21   0.37   0.41   0.41  0.410   0.410  0.370    0.140  0.147    0.069  3.763      0
```

(Page 3 of 4)

Figure AHT6-4 - continued. Procedure AQRPM10 -- program ARPMSST

```
                                          ARPMSST (AQ0270) SUMMARY MESSAGES                                          PAGE      1

NUMBER OF INPUT RECORDS:                 12
NUMBER OF ERRORS:                         1
NUMBER OF OUTPUT PAGES:                   3

PROGRAM-NAME: ARPMSST (AQ0270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 4 of 4)

Figure AHT6-4 - continued. Procedure AQRPM10 -- program ARPMSST

## AQDHS-II AD HOC TEST 7

### Retrieve Data and List the Answer File

The primary function of this ad hoc test is to exercise the copy-member capabilities of the retrieval language processor. Each record containing sulfur dioxide data recorded in units of parts per million and having an average reading value above 1.0 part per million is retrieved during an execution of AQRTM10, the retrieval procedure. The answer file is listed with the master file detailed report procedure, AQRPM20.

Test 13 describes the retrieval programs. The retrieval specifications in the present test are in the COBOL language and are contained in three copy members; the names of all three members appear on the $$SELECT card in specific keyword fields. The primary copy member does not always require the use of the other two members; this was the case in Ad Hoc Test 2, in which the primary copy member appeared by itself on the $$SELECT card. In the present test, the primary member is named RPTEST03; this name begins in column 16. The user-defined subroutine member is subordinate to the primary copy member; this subordinate member contains a COBOL paragraph or paragraphs that are performed by the primary copy member. User-defined data items, which should be under the same '01' level, are stored in the third copy member. The user-defined subroutine member is named RPTEST3A in this test; this name is placed on the $$SELECT card beginning in column 52. The user-defined data member is named DTTEST03; this name begins in column 43. See Figure AHT7-1 for a listing of each of these copy members. When three COBOL copy members are used in the fashion described above, there must be at least one AQDHS-II retrieval language statement following the $$SELECT card.

The detailed list program, ARPMSTR (AQ0230), is discussed in Test 6.

The run stream for Ad Hoc Test 7 appears in Figure AHT7-2. Sample output from the execution of the retrieval procedure is shown in Figure AHT7-3. The retrieval execution involves the input of the active master file, AQMST04T (created and stored on disk in test 26), and the output of the answer file, TEMPRETR. Notice in the output from ARTLNGP (AQ0110), a single AQDHS-II retrieval language statement YEAR=YEAR appears. This statement, which has no impact on the retrieval specifications, is present simply as a requirement of using three copy members.

Sample output from the detailed list step is shown in Figure AHT7-4. The user options in this step specify a MEAN report with a display criterion of no data greater than 9990.

### Copy Member: RPTEST03

```
MOVE FALSE TO RECORD-QUALIFIES-SW.
IF PARAMETER-CODE EQUAL TO '42401'
    AND UNIT-CODE EQUAL TO '07'
  MOVE ZERO TO USER-TOTAL-READING
               USER-AVG-READING
               USER-NBR
  MOVE BINARY-1 TO SUB
 PERFORM USER-CK THRU USER-CK-END NBR-OF-READINGS TIMES
  DIVIDE USER-TOTAL-READING BY USER-NBR
      GIVING USER-AVG-READING
  IF USER-AVG-READING IS GREATER THAN 1
    MOVE TRUE TO RECORD-QUALIFIES-SW.
```

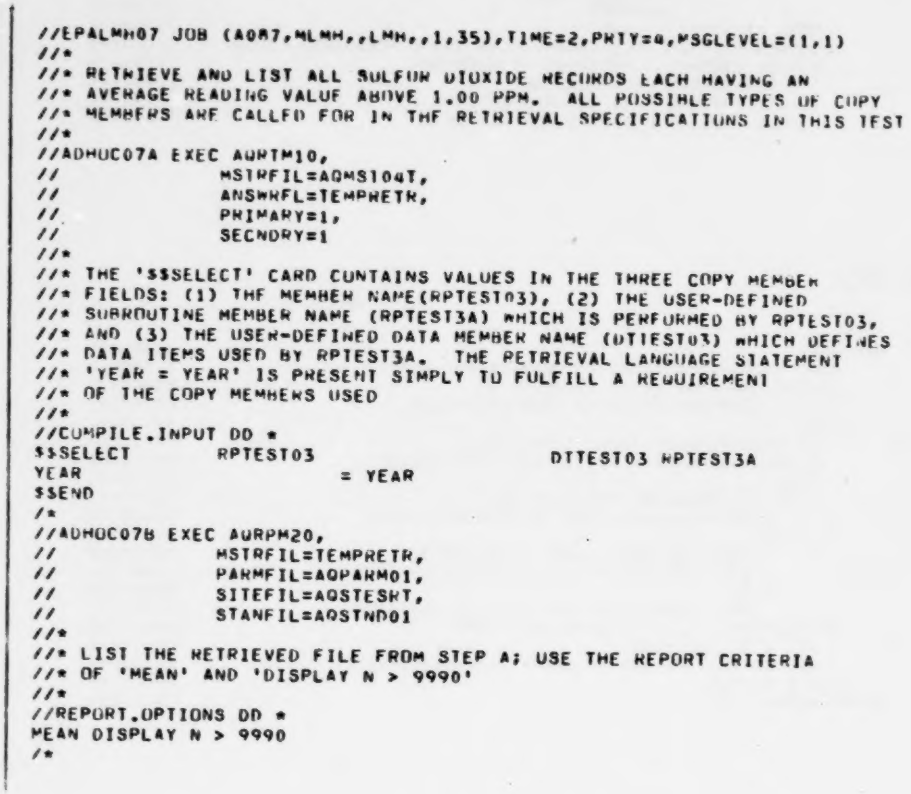
### Copy Member: RPTEST3A

```
USER-CK.
    MOVE DATA-FIELD (SUB) TO USER-DATA-FLD.
    IF DECIMAL-CODE (SUB) EQUAL TO 0
      MOVE USER-DATA-FLD0 TO USER-DATA-FLDX
    ELSE
      IF DECIMAL-CODE (SUB) EQUAL TO 1
        MOVE USER-DATA-FLD1 TO USER-DATA-FLDX
      ELSE
        IF DECIMAL-CODE (SUB) EQUAL TO 2
          MOVE USER-DATA-FLD2 TO USER-DATA-FLDX
        ELSE
          IF DECIMAL-CODE (SUB) EQUAL TO 3
            MOVE USER-DATA-FLD3 TO USER-DATA-FLDX
          ELSE
            MOVE USER-DATA-FLD4 TO USER-DATA-FLDX.
    IF USER-DATA-FLDX IS LESS THAN 9998
      ADD 1 TO USER-NBR
      ADD USER-DATA-FLDX TO USER-TOTAL-READING.
    ADD 1 TO SUB.
USER-CK-END.  EXIT.
```

### Copy Member: DTTEST03

```
01  USER-DATA-STRUCTURE.
    02  USER-TOTAL-READING   PIC S9(5)V9(4) VALUE +0.
    02  USER-AVG-READING     PIC S9(5)V9(4) VALUE +0.
    02  USER-NBR             PIC 99 VALUE 0.
    02  USER-DATA-FLD        PIC S9(4).
    02  USER-DATA-FLD0       REDEFINES
        USER-DATA-FLD        PIC S9(4).
    02  USER-DATA-FLD1       REDEFINES
        USER-DATA-FLD        PIC S999V9.
    02  USER-DATA-FLD2       REDEFINES
        USER-DATA-FLD        PIC S99V99.
    02  USER-DATA-FLD3       REDEFINES
        USER-DATA-FLD        PIC S9V999.
    02  USER-DATA-FLD4       REDEFINES
        USER-DATA-FLD        PIC SV9999.
    02  USER-DATA-FLDX       PIC S9(4)V9(4).
```

Figure AHT7-1.  COBOL Copy Members



```
//EPALMH07 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* RETRIEVE AND LIST ALL SULFUR DIOXIDE RECORDS EACH HAVING AN
//* AVERAGE READING VALUE ABOVE 1.00 PPM.  ALL POSSIBLE TYPES OF COPY
//* MEMBERS ARE CALLED FOR IN THE RETRIEVAL SPECIFICATIONS IN THIS TEST
//*
//ADHOC07A EXEC AQRTM10,
//              MSTRFIL=AQMS104T,
//              ANSWRFL=TEMPRETR,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* THE '$$SELECT' CARD CONTAINS VALUES IN THE THREE COPY MEMBER
//* FIELDS: (1) THE MEMBER NAME(RPTEST03), (2) THE USER-DEFINED
//* SUBROUTINE MEMBER NAME (RPTEST3A) WHICH IS PERFORMED BY RPTEST03,
//* AND (3) THE USER-DEFINED DATA MEMBER NAME (DTTEST03) WHICH DEFINES
//* DATA ITEMS USED BY RPTEST3A.  THE RETRIEVAL LANGUAGE STATEMENT
//* 'YEAR = YEAR' IS PRESENT SIMPLY TO FULFILL A REQUIREMENT
//* OF THE COPY MEMBERS USED
//*
//COMPILE.INPUT DD *
$$SELECT        RPTEST03                         DTTEST03 RPTEST3A
YEAR                         = YEAR
$$END
/*
//ADHOC07B EXEC AQRPM20,
//              MSTRFIL=TEMPRETR,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSTESRT,
//              STANFIL=AQSTND01
//*
//* LIST THE RETRIEVED FILE FROM STEP A; USE THE REPORT CRITERIA
//* OF 'MEAN' AND 'DISPLAY N > 9990'
//*
//REPORT.OPTIONS DD *
MEAN DISPLAY N > 9990
/*
```

Figure AHT7-2.  Run Stream

```
                    AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                PAGE    1
PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


INPUT (CONTROL CARDS):

$$SELECT       RPTEST03                  DITEST04 RPTEST3A              27.
YEAR                    = YEAR                                           28.
$$END                                                                    29.

NUMBER OF CONTROL CARDS READ:                  3
NUMBER OF RETRIEVAL SKELETON RECORDS READ:     1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:    1,194
NUMBER OF CONDITIONAL MESSAGES:                0
NUMBER OF ERROR MESSAGES:                      0
NUMBER OF ABORT MESSAGES:                      0
```

-----------------------------------------------------------------------------------------------------

```
                    AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                         PAGE    1
PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979


NUMBER OF MASTER FILE RECORDS READ:                 526
NUMBER OF ANSWER FILE RECORDS WRITTEN:                1
NUMBER OF CONDITIONAL MESSAGES:                       0
NUMBER OF ABORT MESSAGES:                             0
```

Figure AHT7-3. Procedure AQRTM10 -- programs ARTLNGP and ARTGENR

```
                          AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                                   PAGE     1
PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

USER-SPECIFIED OPTION: MEAN DISPLAY N > 9990                                                   41.


NUMBER OF OPTION STATEMENTS READ:                         2
NUMBER OF MASTER FILE RECORDS READ:                       1
NUMBER OF REPORT PAGES WRITTEN:                           2
NUMBER OF ERRORS DETECTED:                                0




------------------------------------------------------------------------------------------------------------------------------


STATE:  NORTH CAROLINA (34)                  AQDHS-II AIR QUALITY DATA REPORT                                          PAGE     2
                                                     DISPLAY N>9990

AQCR:    170      AGENCY:    EPA - ATMOSPHERIC RESEARCH             COLLECTION METH:    INSTRUMENTAL                 YEAR:  1976
COUNTY: 2880      PROJECT:   SPECIAL STUDIES                        ANALYSIS METHOD:    COULOMETRIC                  MONTH:  MARCH
AREA:   0002      PARAMETER: SULFUR DIOXIDE                         SAMPLING INTERVAL: 01 HOURS                      MIN DET:     .01
SITE:   001       UNITS:     PARTS PER MILLION (VOL/VOL)            SAROAD KEY:          340002001D0517              UNITS CODE: 07
WRIGHTSVILLE BEACH, NEW HANOVER CO.       WRIGHTSVILLE BEACH        KEY-1: 341702880000200lD05176 KEY-2: 424011407 KEY-3: 030300
                                              PRIMARY                                                 SECONDARY
FEDERAL STANDARD      0.14 PARTS PER MILLION  24 HOUR MAX, 1 PER YEAR           0.5 PARTS/MILLION, 3 HR MAX, 1 PER YEAR
STATE STANDARD        0.03 PARTS/MILLION, ANNUAL ARITHMETIC MEAN


                                              HOUR

DAY      12       13       14       15       16       17       18       19       20       21       22       23    NO.    MEAN     MAX

01
02                                                                                                                  0
03     0.017    0.030    0.037    0.030    0.027    0.023    0.015    0.011    0.008    0.005    0.006    0.003    24    283.4    5840

NO         1        1        1        1        1        1        1        1        1        1        1        1    24

MEAN    .017      .03     .037      .03     .027     .023     .015     .011     .008     .005     .006     .003          283.4

MAX    0.017    0.030    0.037    0.030    0.027    0.023    0.015    0.011    0.008    0.005    0.006    0.003                   5840
```

Figure AHT7-4.  Procedure AQRPM20 -- program ARPMSTR

## AQDHS-II AD HOC TEST 8

### Run a Statistical Analysis on an Answer File

This ad hoc test exercises the year option of the statistical analysis programs. First, an answer file of 1973 and January 1979 data is retrieved with an execution of the procedure AQRTM10. The statistical analysis procedure, AQRPM10, is run against this answer file. AQRPM10 executes the preliminary statistics program, ASTPRLM (AQ0190), the statistical analysis program, ASTMSST (AQ0200), and the statistical report program, ARPMSST (AQ0270).

Standard AQDHS-II retrieval language specifications are used in this test. See Test 13 for a description of the retrieval-related programs.

Test 10 describes the three statistical analysis programs. The present ad hoc test uses an analysis period of a full year; compare this with the monthly period (Test 10) and the quarterly period (Ad Hoc Test 6).

Figure AHT8-1 shows the run stream of this test. Step A, in which the retrieval procedure, AQRTM10, is executed, uses the active master file AQMST04T (created and stored on disk in Test 26) as the input file and produces the answer file TEMPRETR. Figure AHT8-2 gives sample output for this retrieval step. Step B runs the statistical analysis against the answer file TEMPRETR, using parameter and site files AQPARM01 and AQSTESRT (created in tests 1 and 6, respectively). The preliminary statistics option is YEAR. The user-specified statistical report option is BRIEF. Figure AHT8-3 shows sample output from this statistical analysis.

Note that the answer file was not sorted using the STAT option of the master file sort program, ASRMSTR (AQ0140), prior to being input to the statistical analysis procedure. This causes the report to be printed by site, by year within site, by parameter within year. Thus, all data for a given site and parameter would not necessarily appear together. However, sorting of the answer file would insure that all data for a given site and parameter would appear together in the statistical analysis report.

```
//EPALMH08 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* RETRIEVE ALL 1973 DATA AND JANUARY,1979, DATA; RUN A STATISTICAL
//* ANALYSIS ON THE ANSWER FILE USING THE YEAR OPTION
//*
//ADHOC08A EXEC AQRTM10,
//              MSTRFIL=AQMS104T,
//              ANSWRFL=TEMPRETR,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* RETRIEVE THE DATA WITH REGULAR RETRIEVAL LANGUAGE
//* SPECIFICATIONS
//*
//COMPILE.INPUT DD *
$$SELECT
YEAR                    = '79'                        AND
MONTH                   = '01'                        OR
YEAR                    = '73'
$$END
/*
//ADHOC08B EXEC AQRPM10,
//              MSTRFIL=TEMPRETR,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSTESRT,
//              PRI1=1,
//              SEC1=1,
//              PRI2=1,
//              SEC2=1
//*
//* PRODUCE THE STATISTICAL REPORT, WITH THE 'YEAR' OPTION
//* SPECIFIED IN THE PRELIMINARY STATISTICS STEP
//*
//PRELIM.OPTIONS DD *
YEAR
/*
//PRINTS.OPTIONS DD *
BRIEF
/*
```

Figure AHT8-1. Run Stream

```
                    AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978

INPUT (CONTROL CARDS):

$$SELECT                                                                  23.
YEAR                       = '79'                                    AND  24.
MONTH                      = '01'                                    OR   25.
YEAR                       = '73'                                         26.
$$END                                                                     27.

NUMBER OF CONTROL CARDS READ:                     5
NUMBER OF RETRIEVAL SKELETON RECORDS READ:    1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:   1,185
NUMBER OF CONDITIONAL MESSAGES:                   0
NUMBER OF ERROR MESSAGES:                         0
NUMBER OF ABORT MESSAGES:                         0

-----------------------------------------------------------------------------------------------------------

                      AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                   PAGE    1

PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979

NUMBER OF MASTER FILE RECORDS READ:                  526
NUMBER OF ANSWER FILE RECORDS WRITTEN:                45
NUMBER OF CONDITIONAL MESSAGES:                        0
NUMBER OF ABORT MESSAGES:                              0
```

Figure AHT8-2. Procedure AQRTM10 -- programs -- ARTLNGP and ARTGENR

```
                    AQDHS-II PRELIMINARY STATISTICS PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ASTPRLM (AQ0190)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: YEAR


NUMBER OF MASTER FILE RECORDS READ:                                 45
NUMBER OF MASTER FILE RECORDS WITH COMPOSITE DATA:                  30
NUMBER OF PARAMETER FILE RECORDS READ:                              89
NUMBER OF STATISTICS RAW DATA FILE RECORDS WRITTEN:                 32
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS WRITTEN:               7
NUMBER OF DIAGNOSTIC MESSAGES:                                       0
```

```
-------------------------------------------------------------------------------------------------------------
```

```
                    AQDHS-II STATISTICAL ANALYSIS PROGRAM  -  DIAGNOSTIC REPORT                      PAGE 1

PROGRAM NAME: ASTMSST (AQ0200)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF STATISTICS RAW DATA FILE RECORDS READ:            32
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS READ:          7
NUMBER OF STATISTICS FILE RECORDS WRITTEN:                  15
```

(Page 1 of 4)

Figure AHT8-3. Procedure AQRPM10 -- programs ASTPRLM and ASTMSST

```
                         AQDHS-II STATISTICAL ANALYSIS REPORT PROGRAM  -  DIAGNOSTIC REPORT                         PAGE     1

PROGRAM-NAME: ARPMSST (AQ0270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTION CARD IMAGE: BRIEF                                                         49.
                     *** ARPMSST 006 WARNING - COLUMN 7 - INVALID OR MISSING LINE MAXIMUM OPTION - 64 LINES PER PAGE USED

PRINTING OPTIONS CHOSEN ARE BRIEF SITE BREAK AND 64 LINES PER PAGE
```

(Page 2 of 4)

Figure AHT8-3 - continued. Procedure AQRPM10 -- program ARPMSST

```
                                   AQDHS-II STATISTICAL ANALYSIS REPORT                                   PAGE     2
                                          ANALYSIS BY YEAR
                                     STATE (34): NORTH CAROLINA

SITE CODE: 34-0001-002-A-06       AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 2120
AGENCY/PROJECT: A06       SITE ADDRESS: HIGHWAY 301 BUS., JOHNSTON CO.                    CITY: SMITHFIELD

----------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                      METHOD OF COLLECTION AND ANALYSIS                     INTERVAL    UNITS                  TIMES
POLL-METH-INTRV-UNITS CODE                                                                                                   HALF
       PCT    NBR   MIN    MIN                        PERCENTILES                 MAX     2ND    3RD    ARIT   ARIT    GEOM   GEOM   M DET
 YEAR  OBS    OBS  DETEC   OBS     10     30     50     70     90     95     99    OBS     MAX    MAX    MEAN  ST DEV  MEAN  ST DEV  SUB
----------------------------------------------------------------------------------------------------------------------------
OXIDES OF NITROGEN                  GAS BUBBLER               - SALTZMAN METHOD           MONTHLY     PARTS PER MILLION (VOL/VOL)
42603-99-A-07
  73   8.3     1  0.002 0.009  0.009 0.009 0.009 0.009 0.009 0.009 0.009  0.009    N/A    N/A   0.009  0.0     0.009  1.000      0

----------------------------------------------------------------------------------------------------------------------------
----------------------------------------------------------------------------------------------------------------------------

SITE CODE: 34-0001-001-A-06       AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 0960
AGENCY/PROJECT: A06       SITE ADDRESS: YADKIN ROAD                                       CITY:

----------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                      METHOD OF COLLECTION AND ANALYSIS                     INTERVAL    UNITS                  TIMES
POLL-METH-INTRV-UNITS CODE                                                                                                   HALF
       PCT    NBR   MIN    MIN                        PERCENTILES                 MAX     2ND    3RD    ARIT   ARIT    GEOM   GEOM   M DET
 YEAR  OBS    OBS  DETEC   OBS     10     30     50     70     90     95     99    OBS     MAX    MAX    MEAN  ST DEV  MEAN  ST DEV  SUB
----------------------------------------------------------------------------------------------------------------------------
TOTAL SUSPENDED PARTICULATE         HI-VOL                    - GRAVIMETRIC               HOURLY      U-GMS/M3 (25DEG C,1013 M-BARS)
11101-91-1-01
  79   1.1    96  1.000 1.000     2.     6.    15.    23.    40.    42.  9021.  9021.  8003.  45.00  193.9  1221.   12.88  4.063      0

----------------------------------------------------------------------------------------------------------------------------
----------------------------------------------------------------------------------------------------------------------------

SITE CODE: 34-0001-004-A-06       AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 2980
AGENCY/PROJECT: A06       SITE ADDRESS: GUM BRANCH ROAD, ONSLOW COUNTY                    CITY: JACKSONVILLE

----------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                      METHOD OF COLLECTION AND ANALYSIS                     INTERVAL    UNITS                  TIMES
POLL-METH-INTRV-UNITS CODE                                                                                                   HALF
       PCT    NBR   MIN    MIN                        PERCENTILES                 MAX     2ND    3RD    ARIT   ARIT    GEOM   GEOM   M DET
 YEAR  OBS    OBS  DETEC   OBS     10     30     50     70     90     95     99    OBS     MAX    MAX    MEAN  ST DEV  MEAN  ST DEV  SUB
----------------------------------------------------------------------------------------------------------------------------
OXIDES OF NITROGEN                  GAS BUBBLER               - SALTZMAN METHOD           MONTHLY     PARTS PER MILLION (VOL/VOL)
42603-99-A-07
  73 100.0    12  0.002 0.002  0.002 0.002 0.002 0.002 0.099 0.099 0.099  0.099  0.099  0.002   0.017  0.038   0.002  5.340     10
```

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Figure AHT8-3 - continued. Procedure AQRPM10 -- program ARPMSST

```
                                        ARPMSST (AQ0270) SUMMARY MESSAGES                                     PAGE     1

  NUMBER OF INPUT RECORDS:                    15
  NUMBER OF ERRORS:                            1
  NUMBER OF OUTPUT PAGES:                      2

  PROGRAM-NAME: ARPMSST (AQ0270)
  REVISION LEVEL: 2-00
  LAST UPDATE #: 27
  DATE INCORPORATED: MAY 1, 1980
```

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Figure AHT8-3 - continued. Procedure AQRPM10 -- program ARPMSST

## AQDHS-II AD HOC TEST 9

### Generate all Non-Abortive Error Messages of the Master File Transaction Edit Program

Of the 70 error messages possibly generated by the master file transaction edit program, AEDMSTR (AQ0060), only four will cause the run to abort. All the other error messages are exercised in this ad hoc test. The generation of these errors is accomplished in two executions of the procedure AQEDT10, which executes AEDMSTR (AQ0060).

A program description of AEDMSTR (AQ0060) appears in Test 5. Of the 66 non-abortive errors, only one generates a warning-level message that can be suppressed with the NOFLAGW option.

The run stream for this ad hoc test is shown in Figure AHT9-1. Output from the first execution of AEDMSTR (AQ0060) appears in Figure AHT9-2. In this step, 65 of the 66 different error messages appear. The remaining error message, generated by an invalid option card, is produced in the second execution of AEDMSTR (AQ0060). Figure AHT9-3 contains sample output from this second step.

```
//EPALMH09 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* THIS TEST GENERATES ALL WARNING AND ERROR MESSAGES THAT
//* CAN BE PRODUCED BY THE MASTER FILE TRANSACTION EDITOR
//*
//ADHOC09A EXEC AQEDT10,
//             PARMFIL=AQPARM01,
//             TRANS=TRANS1,
//             SITEFIL=AQSITE01,
//             DISP='NEW,PASS',
//             PRIMARY=1,
//  -          SECNDRY=1
//*
//* ALL ERROR AND WARNING MESSAGES ARE PRODUCED IN THIS STEP
//* EXCEPT THE MESSAGE FOR AN INVALID OPTION CARD; A VALID OPTION CARD
//* IS REQUIRED TO LIST THE TRANSACTIONS AND FLAG THE WARNING
//* CONDITION
//*
//PRESORT.INPUT  DD  *
1340003010G041750822006110123121000 2    000100060005000400030003               2
1340002001D05173100500611042114100030004000300020004000500030002               2
1100001001E02174070808611013128 1-291    005200880089010301270169               2
2340003002G04C730307486             6                                          2
340003002G04C740291184350191011 0005                                          2
 2340003002G04C7401911843501910110005
2340003002G0497401911843501910110005                                           7
7
1                                                                              2
199                                                                            2
111                                                                            2
1111111                                                                        2
11111111110                                                                    2
1111111111011                                                                  2
1111111111A010                                                                 2
1111111111A01111                                                               2
1111111111A01170                                                               2
1111111111A011701111991111111119                                               2
1111111111A011701111111111111111AAAA                                           2
```

(Remainder of transactions omitted)

```
//EDIT.OPTIONS DD *
LIST FLAGW
//ADHOC09B EXEC AQEDT10,
//             PARMFIL=AQPARM01,
//             TRANS=TRANS2,
//             SITEFIL=AQSITE01,
//             DISP='NEW,PASS',
//             PRIMARY=1,
//             SECNDRY=1
//*
//* AN ERROR MESSAGE IS GENERATED FOR THE INVALID OPTION CARD
//*
//PRESORT.INPUT  DD  *
1340003010G0417508220061101231210002    000100060005000400030003               2
//EDIT.OPTIONS DD *
UTTER NONSENSE
//*
```

Figure AHT9-1. Run Stream

```
                                    AQDHS-II MASTER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT

PROGRAM NAME: ASRTRAN (AQ0370)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980



NUMBER OF INPUT TRANSACTIONS:                135
NUMBER OF OUTPUT TRANSACTIONS:               139
NUMBER OF INPUT FORM 3 TRANSACTIONS:          22
NUMBER OF OUTPUT FORM 3 TRANSACTIONS:         26
```

(Page 1 of 16)

Figure AHT9-2. Procedure AQEDT10 -- program ASRTRAN

```
                          AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                 PAGE    1

PROGRAM NAME: AEDMSTR (AQ0060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: LIST   FLAGW


INPUT TRANSACTIONS            ERRORS

1                                                                              2
          *** AEDMSTR 006 ERROR - COLUMN 02 - NON-NUMERIC STATE CODE - CARD REJECTED
          *** AEDMSTR 008 ERROR - COLUMN 04 - NON-NUMERIC AREA CODE - CARD REJECTED
          *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
          *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
          *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
          *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
          *** AEDMSTR 013 ERROR - COLUMN 15 - NON-NUMERIC YEAR - CARD REJECTED
          *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
          *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
          *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
          *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
          *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
          *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
          *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

7                                                                         30.
          *** AEDMSTR 004 ERROR - COLUMN 80 - NON-NUMERIC ACTION CODE - CARD REJECTED
          *** AEDMSTR 001 ERROR - COLUMN 01 - INVALID TRANSACTION CODE - CARD REJECTED

1100001001E021740708086110131281-291    005200880084010301270169               2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 040 ERROR - COLUMN 28 - INVALID METHOD CODE - CARD REJECTED
          *** AEDMSTR 066 ERROR - COLUMN 33 - DATA MUST BE POSITIVE FOR THIS PARM - CARD REJECTED

1100001001F971701111119999999971                                               2
          *** AEDMSTR 038 ERROR - COLUMN 12 - INVALID PROJECT CODE - CARD REJECTED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED
          *** AEDMSTR 041 ERROR - COLUMN 30 - INVALID UNITS CODE - CARD REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

11000010010971701111119999999971                                               2
          *** AEDMSTR 037 ERROR - COLUMN 11 - INVALID AGENCY CODE - CARD REJECTED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED
          *** AEDMSTR 041 ERROR - COLUMN 30 - INVALID UNITS CODE - CARD REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

11000019970971701111119999999971                                               2
          *** AEDMSTR 036 ERROR - COLUMN 08 - INVALID SITE CODE - CARD REJECTED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED
          *** AEDMSTR 041 ERROR - COLUMN 30 - INVALID UNITS CODE - CARD REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

11099979970971701111119999999971                                               2
          *** AEDMSTR 035 ERROR - COLUMN 04 - INVALID AREA CODE - CARD REJECTED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED
```

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Figure AHT9-2. Procedure AQEDT10 -- program AEDMSTR

```
                         AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     2

INPUT TRANSACTIONS              ERRORS

         *** AEDMSTR 041 ERROR - COLUMN 30 - INVALID UNITS CODE - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

111                                                                       2
         *** AEDMSTR 008 ERROR - COLUMN 04 - NON-NUMERIC AREA CODE - CARD REJECTED
         *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
         *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
         *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
         *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
         *** AEDMSTR 013 ERROR - COLUMN 15 - NON-NUMERIC YEAR - CARD REJECTED
         *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
         *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
         *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
         *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
         *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
         *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

1111111                                                                   2
         *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
         *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
         *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
         *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
         *** AEDMSTR 013 ERROR - COLUMN 15 - NON-NUMERIC YEAR - CARD REJECTED
         *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
         *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
         *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
         *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
         *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
         *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

2111111111A01C7099991Z43501910119997                                      2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 030 ERROR - COLUMN 22 - INVALID COMPOSITE TIME CODE - CARD REJECTED
         *** AEDMSTR 033 ERROR - COLUMN 17 - INVALID PERIOD - CARD REJECTED

2111111111A01C7099999Z43501910119997                                      2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 030 ERROR - COLUMN 22 - INVALID COMPOSITE TIME CODE - CARD REJECTED
         *** AEDMSTR 034 ERROR - COLUMN 21 - INVALID COMPOSITE TYPE - CARD REJECTED

2111111111A01C70    1 43501910119997                                      2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 029 ERROR - COLUMN 19 - NON-NUMERIC NUMBER OF SAMPLES - CARD REJECTED
         *** AEDMSTR 030 ERROR - COLUMN 22 - INVALID COMPOSITE TIME CODE - CARD REJECTED
         *** AEDMSTR 032 ERROR - COLUMN 17 - NON-NUMERIC PERIOD - CARD REJECTED

2111111111A01C70      43501910119997                                      2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 029 ERROR - COLUMN 19 - NON-NUMERIC NUMBER OF SAMPLES - CARD REJECTED
         *** AEDMSTR 030 ERROR - COLUMN 22 - INVALID COMPOSITE TIME CODE - CARD REJECTED
         *** AEDMSTR 031 ERROR - COLUMN 21 - NON-NUMERIC COMPOSITE TYPE - CARD REJECTED
```

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Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                     AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                PAGE    3

INPUT TRANSACTIONS            ERRORS

1111111111A010
                                                                                    2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
         *** AEDMSTR 013 ERROR - COLUMN 15 - NON-NUMERIC YEAR - CARD REJECTED
         *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
         *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
         *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
         *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
         *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
         *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

1111111111A01170
                                                                                    2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
         *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
         *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
         *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
         *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
         *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

1111111111A01111
                                                                                    2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 014 ERROR - COLUMN 15 - YEAR LESS THAN SIXTY - CARD REJECTED
         *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
         *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
         *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
         *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
         *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
         *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

1111111111A0117011111111111111111
                                                                                    2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED
         *** AEDMSTR 039 ERROR - COLUMN 23 - INVALID PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

1111111111A01170111111111111111111AAAA
                                                                                    2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED
         *** AEDMSTR 039 ERROR - COLUMN 23 - INVALID PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 027 ERROR - COLUMN 33 - NON-NUMERIC READING - CARD REJECTED

1111111111A0117011119911111111119
                                                                                    2
         *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED
         *** AEDMSTR 039 ERROR - COLUMN 23 - INVALID PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 020 ERROR - COLUMN 32 - DECIMAL POSITION GREATER THAN FOUR - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

11111111110
                                                                                    2
```

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Figure AHT9-2 - continued.  Procedure AQEDT10 -- program AEDMSTR

```
                        AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    4

INPUT TRANSACTIONS            ERRORS

          *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
          *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
          *** AEDMSTR 013 ERROR - COLUMN 15 - NON-NUMERIC YEAR - CARD REJECTED
          *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
          *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
          *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
          *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
          *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
          *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
          *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

111111111111911                                                                     2
          *** AEDMSTR 007 ERROR - COLUMN 02 - INVALID STATE CODE - CARD REJECTED
          *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
          *** AEDMSTR 013 ERROR - COLUMN 15 - NON-NUMERIC YEAR - CARD REJECTED
          *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
          *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
          *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
          *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
          *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
          *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
          *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

 2340003002G04C740191188350191011000S                                     28.
          *** AEDMSTR 004 ERROR - COLUMN 80 - NON-NUMERIC ACTION CODE - CARD REJECTED
          *** AEDMSTR 002 ERROR - COLUMN 01 - NON-NUMERIC TRANSACTION CODE - CARD REJECTED

1340001001A061700101006210122150040-XYZ1732-ARC                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 065 ERROR - COLUMN 37 - INVALID NEGATIVE DATA FORMAT      - CARD REJECTED
          *** AEDMSTR 065 ERROR - COLUMN 45 - INVALID NEGATIVE DATA FORMAT      - CARD REJECTED

1340001001A061700101004240111021040-2191732-400                                    2
          *** AEDMSTR 066 ERROR - COLUMN 37 - DATA MUST BE POSITIVE FOR THIS PARM - CARD REJECTED
          *** AEDMSTR 066 ERROR - COLUMN 45 - DATA MUST BE POSITIVE FOR THIS PARM - CARD REJECTED

1340001001A06774022510112018109100010001001                                        2
          *** AEDMSTR 045 ERROR - COLUMN 21 - INVALID START HOUR (READINGS SPAN END OF DAY) - REJECTED

334A068621012215070010100001001-ARC                                                2
          *** AEDMSTR 063 ERROR - COLUMN 33 - INVALID NEGATIVE DATA FORMAT      - GROUP-01 REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

334A068424011102170010100001001-007                                                2
          *** AEDMSTR 064 ERROR - COLUMN 33 - DATA MUST BE POSITIVE FOR THIS PARM-GROUP-01 REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

334A068424011102170010100001002-181                                                2
          *** AEDMSTR 064 ERROR - COLUMN 33 - DATA MUST BE POSITIVE FOR THIS PARM-GROUP-01 REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

334A068621012215070010100001002-CRA                                                2
          *** AEDMSTR 063 ERROR - COLUMN 33 - INVALID NEGATIVE DATA FORMAT      - GROUP-01 REJECTED
```

(Page 5 of 16)

Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                    AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                      PAGE    5

INPUT TRANSACTIONS          ERRORS

         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

1340001003A06A650513246110120131000700B0                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06A65051300611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06065051399611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06175051322611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06175051309611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06175051316611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06175051308611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06175051300611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06275051317611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06275051316611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06275051301611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06275051300611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06275051318611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06275051315611012013100070080                                    2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06275051302611012013100070080                                    2
```

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Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                         AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                        PAGE     6

INPUT TRANSACTIONS          ERRORS

         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A0637505130361101201310007008O                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06375051323611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06375051308611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06375051317611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06375051302611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06375051301611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06375051300611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06475051303611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06475051302611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06475051301611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06475051300611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06475051304611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06575051306611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06575051317611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A06575051305611012013100070080                                2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06575051304611012013100070080                                2
```

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Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

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                            AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                        PAGE     7

INPUT TRANSACTIONS               ERRORS

          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A065750513036110120131000700080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 027 ERROR - COLUMN 41 - NON-NUMERIC READING - CARD REJECTED

1340001003A065750513026110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A065750513016110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A065750513006110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513016110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513006110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513066110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513076110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513056110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513046110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513036110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513026110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A066750513086110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A066750513166110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A067750513166110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A067750513166110120131000070080                                          2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

1340001003A067750513116110120131000070080                                          2
```

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Figure AHT9-2 - continued.  Procedure AQEDT10 -- program AEDMSTR

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                   AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                PAGE    8

INPUT TRANSACTIONS             ERRORS

         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051310611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051309611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051309611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051308611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051300611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051300611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051307611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051306611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051304611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051304611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051305611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051303611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051301611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06775051302611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340001003A06865051399611012013100070080                                        2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
         *** AEDMSTR 005 ERROR - COLUMN 10 - INVALID TIME CODE - CARD REJECTED
         *** AEDMSTR 025 ERROR - COLUMN 21 - START HOUR INVALID FOR TIME CODE - CARD REJECTED

334A06862101221507001010000010031500                                            2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

2340002001D05A7408011244101150110196                                            2
         *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

2340002001D05B7408012344101150110196                                            2
```

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Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                        AODMS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                PAGE    9

INPUT TRANSACTIONS              ERRORS

          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

2340002001D05H7408019944101150110196                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
          *** AEDMSTR 026 WARNING - COLUMN 21 - START HOUR GREATER THAN 23 -CARD ACCEPTED

2340002001D0507408012944101150110196                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
          *** AEDMSTR 026 WARNING - COLUMN 21 - START HOUR GREATER THAN 23 -CARD ACCEPTED

2340002001D0507408012044101150110196                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED

1340002001D05173100500611042114100030004000300020004000500030002        2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 039 ERROR - COLUMN 23 - INVALID PARAMETER CODE - CARD REJECTED

2340002001D0577408012344101150110196                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED

2340002001D0587408010044101150110196                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

2340002001D0587408019944101150110196                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 026 WARNING - COLUMN 21 - START HOUR GREATER THAN 23 -CARD ACCEPTED

2340002001D0597408010744101150110196                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

2340003002G04C740105181110191 109997                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 043 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

2340003002G04C730307486                6                                2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 058 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE        - GROUP-01 REJECTED
          *** AEDMSTR 059 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE           - GROUP-01 REJECTED
          *** AEDMSTR 060 ERROR - COLUMN 30 - NON-NUMERIC UNIT CODE             - GROUP-01 REJECTED
          *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
          *** AEDMSTR 058 ERROR - COLUMN 37 - NON-NUMERIC PARAMETER CODE        - GROUP-02 REJECTED
          *** AEDMSTR 059 ERROR - COLUMN 42 - NON-NUMERIC METHOD CODE           - GROUP-02 REJECTED
          *** AEDMSTR 060 ERROR - COLUMN 44 - NON-NUMERIC UNIT CODE             - GROUP-02 REJECTED
          *** AEDMSTR 055 ERROR - COLUMN 46 - NONUMERIC DECIMAL POSITION        - GROUP-02 REJECTED
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED

1340003002G0417401010011101910109997                                    2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

1340003002G0417401010011101910109997                                    2
```

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Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                         AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                   PAGE    10

INPUT TRANSACTIONS              ERRORS

          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 042 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

2340003002G0497401010011101910109997                                              2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 043 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

2340003002G0497401911843501910110005                                              7
          *** AEDMSTR 003 ERROR - COLUMN 80 - INVALID ACTION CODE - CARD REJECTED
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITF FILE - DEFAULT SLAMS/NAHS ID USED
          *** AEDMSTR 018 ERROR - COLUMN 19 - INVALID DAY - CARD REJECTED

1340003010G0417508220061101231210002     0001000600050004000030003                2
          *** AEDMSTR 069 WARNING - PARAMETER NOT IN SITE FILE - DEFAULT SLAMS/NAMS ID USED
          *** AEDMSTR 041 ERROR - COLUMN 30 - INVALID UNITS CODE - CARD REJECTED

234003002G04C7401911846210322170-7H74240111021-7776210322170-990                2
          *** AEDMSTR 063 ERROR - COLUMN 33 - INVALID NEGATIVE DATA FORMAT      - GROUP-01 REJECTED
          *** AEDMSTR 064 ERROR - COLUMN 47 - DATA MUST BE POSITIVE FOR THIS PARM-GROUP-02 REJECTED
          *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
          *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
          *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
          *** AEDMSTR 016 ERROR - COLUMN 17 - MONTH ZERO OR GREATER THAN TWELVE - CARD REJECTED
          *** AEDMSTR 026 WARNING - COLUMN 21 - START HOUR GREATER THAN 23 -CARD ACCEPTED
          *** AEDMSTR 014 ERROR - COLUMN 15 - YEAR LESS THAN SIXTY - CARD REJECTED

234003002G04C7401911846210322170-7H7                                              2
          *** AEDMSTR 063 ERROR - COLUMN 33 - INVALID NEGATIVE DATA FORMAT      - GROUP-01 REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

234003002G04C74019118443501119799999                                              2
          *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
          *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
          *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD PEJECTED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
          *** AEDMSTR 016 ERROR - COLUMN 17 - MONTH ZERO OR GREATER THAN TWELVE - CARD REJECTED
          *** AEDMSTR 026 WARNING - COLUMN 21 - START HOUR GREATER THAN 23 -CARD ACCEPTED
          *** AEDMSTR 014 ERROR - COLUMN 15 - YEAR LESS THAN SIXTY - CARD PEJECTED
          *** AEDMSTR 053 ERROR - COLUMN 30 - INVALID UNITS CODE                 - GROUP-01 REJECTED
          *** AEDMSTR 054 ERROR - COLUMN 32 - DECIMAL POSITION GREATER THAN FOUR - GROUP-01 REJECTED

234003002G04C74019118443501979799999                                              2
          *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
          *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
          *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
          *** AEDMSTR 016 ERROR - COLUMN 17 - MONTH ZERO OR GREATER THAN TWELVE - CARD REJECTED
          *** AEDMSTR 026 WARNING - COLUMN 21 - START HOUR GREATER THAN 23 -CARD ACCEPTED
          *** AEDMSTR 014 ERROR - COLUMN 15 - YEAR LESS THAN SIXTY - CARD REJECTED
          *** AEDMSTR 052 ERROR - COLUMN 28 - INVALID METHOD CODE                - GROUP-01 REJECTED
          *** AEDMSTR 054 ERROR - COLUMN 32 - DECIMAL POSITION GREATER THAN FOUR - GROUP-01 REJECTED

234003002G04C74019118499999979799999                                              2
          *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
```

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Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                     AQDMS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                     PAGE    11

INPUT TRANSACTIONS              ERRORS

          *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
          *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
          *** AEDMSTR 005 ERROR - COLUMN 14 - INVALID TIME CODE - CARD REJECTED
          *** AEDMSTR 016 ERROR - COLUMN 17 - MONTH ZERO OR GREATER THAN TWELVE - CARD REJECTED
          *** AEDMSTR 026 WARNING - COLUMN 21 - START HOUR GREATER THAN 23 -CARD ACCEPTED
          *** AEDMSTR 014 ERROR - COLUMN 15 - YEAR LESS THAN SIXTY - CARD REJECTED
          *** AEDMSTR 052 ERROR - COLUMN 28 - INVALID METHOD CODE                  - GROUP-01 REJECTED
          *** AEDMSTR 054 ERROR - COLUMN 32 - DECIMAL POSITION GREATER THAN FOUR - GROUP-01 REJECTED

234003002G04C7401911841110192021-5006210322170-52H1110192021-321               2
          *** AEDMSTR 064 ERROR - COLUMN 33 - DATA MUST BE POSITIVE FOR THIS PARM-GROUP-01 REJECTED
          *** AEDMSTR 063 ERROR - COLUMN 47 - INVALID NEGATIVE DATA FORMAT         - GROUP-02 REJECTED
          *** AEDMSTR 064 ERROR - COLUMN 61 - DATA MUST BE POSITIVE FOR THIS PARM-GROUP-03 REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

234003002G04C7401911841110192021-500                                           2
          *** AEDMSTR 064 ERROR - COLUMN 33 - DATA MUST BE POSITIVE FOR THIS PARM-GROUP-01 REJECTED
          *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

337F05A11101910107112149900012340025                                           2
          *** AEDMSTR 026 WARNING - COLUMN 24 - START HOUR GREATER THAN 23 -CARD ACCEPTED

337F05L11101910107112147700012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED
          *** AEDMSTR 026 WARNING - COLUMN 24 - START HOUR GREATER THAN 23 -CARD ACCEPTED

337F05111101910107112140000012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05211101910107112141700012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05211101910107112140100012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05511101910107112140500012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05611101910107112141200012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05711101910107112140500012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05711101910107112141100012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05711101910107112141500012340025                                           2
          *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED

337F05811101910107105040000012349997                                           2
          *** AEDMSTR 043 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED

337F05811101910107105040000012349997                                           2
          *** AEDMSTR 043 CONDITIONAL - COLUMN 33 - READING EXCEEDS MAXIMUM PERMITTED
```

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Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                    AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE   12

INPUT TRANSACTIONS            ERRORS

                                                                                     2
337F9989999979797105040000012340001
         *** AEDMSTR 050 ERROR - COLUMN 05 - INVALID PROJECT CODE                   - GROUP-01 REJECTED
         *** AEDMSTR 040 ERROR - COLUMN 13 - INVALID METHOD CODE - CARD REJECTED
         *** AEDMSTR 020 ERROR - COLUMN 17 - DECIMAL POSITION GREATER THAN FOUR - CARD REJECTED

                                                                                     2
33709989999979797105040000012340001
         *** AEDMSTR 049 ERROR - COLUMN 04 - INVALID AGENCY CODE                    - GROUP-01 REJECTED
         *** AEDMSTR 040 ERROR - COLUMN 13 - INVALID METHOD CODE - CARD REJECTED
         *** AEDMSTR 020 ERROR - COLUMN 17 - DECIMAL POSITION GREATER THAN FOUR - CARD REJECTED

                                                                                     2
33709989999979797105040000019970001
         *** AEDMSTR 048 ERROR - COLUMN 30 - INVALID SITE CODE                      - GROUP-01 REJECTED
         *** AEDMSTR 040 ERROR - COLUMN 13 - INVALID METHOD CODE - CARD REJECTED
         *** AEDMSTR 020 ERROR - COLUMN 17 - DECIMAL POSITION GREATER THAN FOUR - CARD REJECTED

                                                                                     2
337F05811101910107105041 1   1  1
         *** AEDMSTR 056 ERROR - COLUMN 26 - NON-NUMERIC AREA CODE                  - GROUP-01 REJECTED
         *** AEDMSTR 057 ERROR - COLUMN 30 - NON-NUMERIC SITE CODE                  - GROUP-01 REJECTED
         *** AEDMSTR 062 ERROR - COLUMN 25 - NON-NUMERIC START-HOUR                 - GROUP-01 REJECTED
         *** AEDMSTR 061 ERROR - COLUMN 33 - NON-NUMERIC READING                    - GROUP-01 REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED

                                                                                     2
33709989999979797105040099979970001
         *** AEDMSTR 047 ERROR - COLUMN 26 - INVALID AREA CODE                      - GROUP-01 REJECTED
         *** AEDMSTR 040 ERROR - COLUMN 13 - INVALID METHOD CODE - CARD REJECTED
         *** AEDMSTR 020 ERROR - COLUMN 17 - DECIMAL POSITION GREATER THAN FOUR - CARD REJECTED

                                                                                    2
340003002G04C7402911843501910110005
         *** AEDMSTR 004 ERROR - COLUMN 80 - NON-NUMERIC ACTION CODE - CARD REJECTED
         *** AEDMSTR 044 ERROR - COLUMN 79 - INVALID STATUS FLAG - CARD REJECTED
         *** AEDMSTR 010 ERROR - COLUMN 04 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
         *** AEDMSTR 005 ERROR - COLUMN 07 - INVALID TIME CODE - CARD REJECTED
         *** AEDMSTR 016 ERROR - COLUMN 20 - MONTH ZERO OR GREATER THAN TWELVE - CARD REJECTED
         *** AEDMSTR 026 WARNING - COLUMN 24 - START HOUR GREATER THAN 23 -CARD ACCEPTED
         *** AEDMSTR 021 ERROR - COLUMN 08 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 022 ERROR - COLUMN 13 - NON-NUMERIC METHOD CODE - CARD REJECTED
         *** AEDMSTR 061 ERROR - COLUMN 33 - NON-NUMERIC READING                    - GROUP-01 REJECTED

                                                                                     2
199
         *** AEDMSTR 008 ERROR - COLUMN 04 - NON-NUMERIC AREA CODE - CARD REJECTED
         *** AEDMSTR 009 ERROR - COLUMN 08 - NON-NUMERIC SITE CODE - CARD REJECTED
         *** AEDMSTR 010 ERROR - COLUMN 11 - NON-ALPHABETIC AGENCY CODE - CARD REJECTED
         *** AEDMSTR 011 ERROR - COLUMN 12 - NON-NUMERIC PROJECT CODE - CARD REJECTED
         *** AEDMSTR 012 ERROR - COLUMN 14 - NON-NUMERIC TIME CODE - CARD REJECTED
         *** AEDMSTR 013 ERROR - COLUMN 15 - NON-NUMERIC YEAR - CARD REJECTED
         *** AEDMSTR 015 ERROR - COLUMN 17 - NON-NUMERIC MONTH - CARD REJECTED
         *** AEDMSTR 017 ERROR - COLUMN 19 - NON-NUMERIC DAY - CARD REJECTED
         *** AEDMSTR 019 ERROR - COLUMN 21 - NON-NUMERIC START HOUR - CARD REJECTED
         *** AEDMSTR 021 ERROR - COLUMN 23 - NON-NUMERIC PARAMETER CODE - CARD REJECTED
         *** AEDMSTR 022 ERROR - COLUMN 28 - NON-NUMERIC METHOD CODE - CARD REJECTED
         *** AEDMSTR 023 ERROR - COLUMN 30 - NON-NUMERIC UNITS CODE - CARD REJECTED
         *** AEDMSTR 024 ERROR - COLUMN 32 - NON-NUMERIC DECIMAL POSITION - CARD REJECTED
         *** AEDMSTR 028 ERROR - RECORD CONTAINS NO READINGS - CARD REJECTED
```

(Page 13 of 16)

Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                     AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    13

NUMBER OF TRANSACTIONS READ:                       139
NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:       58
NUMBER OF INTERNAL TRANSACTIONS CREATED:            58
NUMBER OF WARNING MESSAGES:                         94
NUMBER OF CONDITIONAL MESSAGES:                      6
NUMBER OF ERROR MESSAGES:                          285
NUMBER OF ABORT MESSAGES:                            0

PROGRAM NAME: AEDMSTR (AQ0060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 14 of 16)

Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                     AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  CONFIRMATION LISTING                     PAGE    1

INPUT TRANSACTIONS PASSING EDIT CRITERIA

1340001003A06175051316611012013100070080                                        2
1340001003A06175051308611012013100070080                                        2
1340001003A06175051300611012013100070080                                        2
1340001003A06275051317611012013100070080                                        2
1340001003A06275051316611012013100070080                                        2
1340001003A06275051301611012013100070080                                        2
1340001003A06275051300611012013100070080                                        2
1340001003A06375051302611012013100070080                                        2
1340001003A06375051301611012013100070080                                        2
1340001003A06375051300611012013100070080                                        2
1340001003A06475051303611012013100070080                                        2
1340001003A06475051302611012013100070080                                        2
1340001003A06475051301611012013100070080                                        2
1340001003A06475051300611012013100070080                                        2
1340001003A06575051305611012013100070080                                        2
1340001003A06575051304611012013100070080                                        2
1340001003A06575051302611012013100070080                                        2
1340001003A06575051301611012013100070080                                        2
1340001003A06575051300611012013100070080                                        2
1340001003A06675051301611012013100070080                                        2
1340001003A06675051300611012013100070080                                        2
1340001003A06675051306611012013100070080                                        2
1340001003A06675051307611012013100070080                                        2
1340001003A06675051305611012013100070080                                        2
1340001003A06675051304611012013100070080                                        2
1340001003A06675051303611012013100070080                                        2
1340001003A06675051302611012013100070080                                        2
1340001003A06775051311611012013100070080                                        2
1340001003A06775051310611012013100070080                                        2
1340001003A06775051309611012013100070080                                        2
1340001003A06775051309611012013100070080                                        2
1340001003A06775051308611012013100070080                                        2
1340001003A06775051300611012013100070080                                        2
1340001003A06775051300611012013100070080                                        2
1340001003A06775051307611012013100070080                                        2
1340001003A06775051306611012013100070080                                        2
1340001003A06775051304611012013100070080                                        2
1340001003A06775051304611012013100070080                                        2
1340001003A06775051305611012013100070080                                        2
1340001003A06775051303611012013100070080                                        2
1340001003A06775051301611012013100070080                                        2
1340001003A06775051302611012013100070080                                        2
334A06862101221507001010000010031500                                            2
334A06842401110217001010000010030050                                            2
2340002001D05A7408011244101150110196                                            2
2340002001D05B7408012344101150110196                                            2
2340002001D05B7408010044101150110196                                            2
2340002001D05B7408019944101150110196                                            2
2340002001D05974080107441011501 10196                                           2
2340003002G04C74010518                                                          2
1340003002G04174010100111019101099997                                           2
1340003002G04174010100111019101099997                                           2
2340003002G04974010100                                                          2
337F05A11101910107112149900012340025                                            2
337F05A11101910107112142300012340025                                            2
```

(Page 15 of 16)

Figure AHT9-2 - continued.  Procedure AQEDT10 -- program AEDMSTR

```
                     AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  CONFIRMATION LISTING                       PAGE      2

INPUT TRANSACTIONS PASSING EDIT CRITERIA

337F05A11101910107112140500012340025                                               2
337F0581110191010710504                                                            2
337F0581110191010710504                                                            2

NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:          58
```

(Page 16 of 16)

Figure AHT9-2 - continued. Procedure AQEDT10 -- program AEDMSTR

```
                                AQDHS-II MASTER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT

PROGRAM NAME: ASRTRAN (AQ0370)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:                    1
NUMBER OF OUTPUT TRANSACTIONS:                   1
NUMBER OF INPUT FORM 3 TRANSACTIONS:             0
NUMBER OF OUTPUT FORM 3 TRANSACTIONS:            0
```

(Page 1 of 2)

Figure AHT9-3. Procedure AQEDT10 -- program ASRTRAN

```
                         AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                 PAGE     1

PROGRAM NAME: AEDMSTR (AQ0060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: DEFAULT (NOLIST NOFLAGW)


INPUT TRANSACTIONS                 ERRORS
          *** AEDMSTR 046 CONDITIONAL - MISSING OR INVALID OPTION CARD - DEFAULT OPTIONS USED

1340003010G0417508220061101231210002    000100060005000400030003                2
          *** AEDMSTR 041 ERROR - COLUMN 30 - INVALID UNITS CODE - CARD REJECTED


NUMBER OF TRANSACTIONS READ:                         1
NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:        0
NUMBER OF INTERNAL TRANSACTIONS CREATED:             0
NUMBER OF WARNING MESSAGES:                          1
NUMBER OF CONDITIONAL MESSAGES:                      1
NUMBER OF ERROR MESSAGES:                            1
NUMBER OF ABORT MESSAGES:                            0
```

(Page 2 of 2)

Figure AHT9-3 - continued. Procedure AQEDT10 -- program AEDMSTR

## AQDHS-II AD HOC TEST 10

### Exercise the Individual List Options in the Master File Maintenance Program

The master file maintenance program, AFMMSTR (AQ0100), has several options for input and output file listings. Test 5 has demonstrated that, with the NOLIST option, all input and output file listings may be suppressed. At the other extreme all files may be listed, using the single option LIST, as in Test 23. This ad hoc test shows that the listings may also be done on an individual file basis, with the proper choice of option words.

The procedure AQEDT10 is executed in the first step; this procedure executes the master file input transaction sort program, ASRTRAN (AQ0370), and the master file transaction edit program, AEDMSTR (AQ0060). The resulting internal transactions are input to three executions of AQFMM10, the procedure that executes AFMMSTR (AQ0100). Each of these file maintenance steps exercises a different individual-file listing option.

ASRTRAN (AQ0370), AEDMSTR (AQ0060), and AFMMSTR (AQ0100) are discussed in Test 5. In the current test, execution of these programs is performed in separate steps by separate cataloged procedures, as in Test 23.

The run stream for Ad Hoc Test 10 appears in Figure AHT10-1. Step A of the run sorts and edits card transactions using the parameter and site files AQPARM01 and AQSITE01 (created and stored on disk in Tests 1 and 2, respectively). The output internal transaction file, named TEMPTRNS, is produced. Sample output from this edit step is shown in Figure AHT10-2. The internal transaction file, TEMPTRNS, is input to each of the file maintenance steps following. All three file maintenance executions also use the same input master file, the archived file AQARCM02 (created and stored on disk in test 26).

Sample output from the first file maintenance step (Figure AHT10-3) shows that the user-specified option is LISTTRAN and that the input internal transaction file is listed. Sample output from the second file maintenance step (Figure AHT10-4) shows that the user-specified option is LISTOLD and that the input master file's deleted or changed records are listed. Sample output from the third file maintenance step (Figure AHT10-5) shows that the user-specified option is LISTNEW and that the output master file's added or changed records are listed. Remember that any combination of these three list options may be specified in a single run.

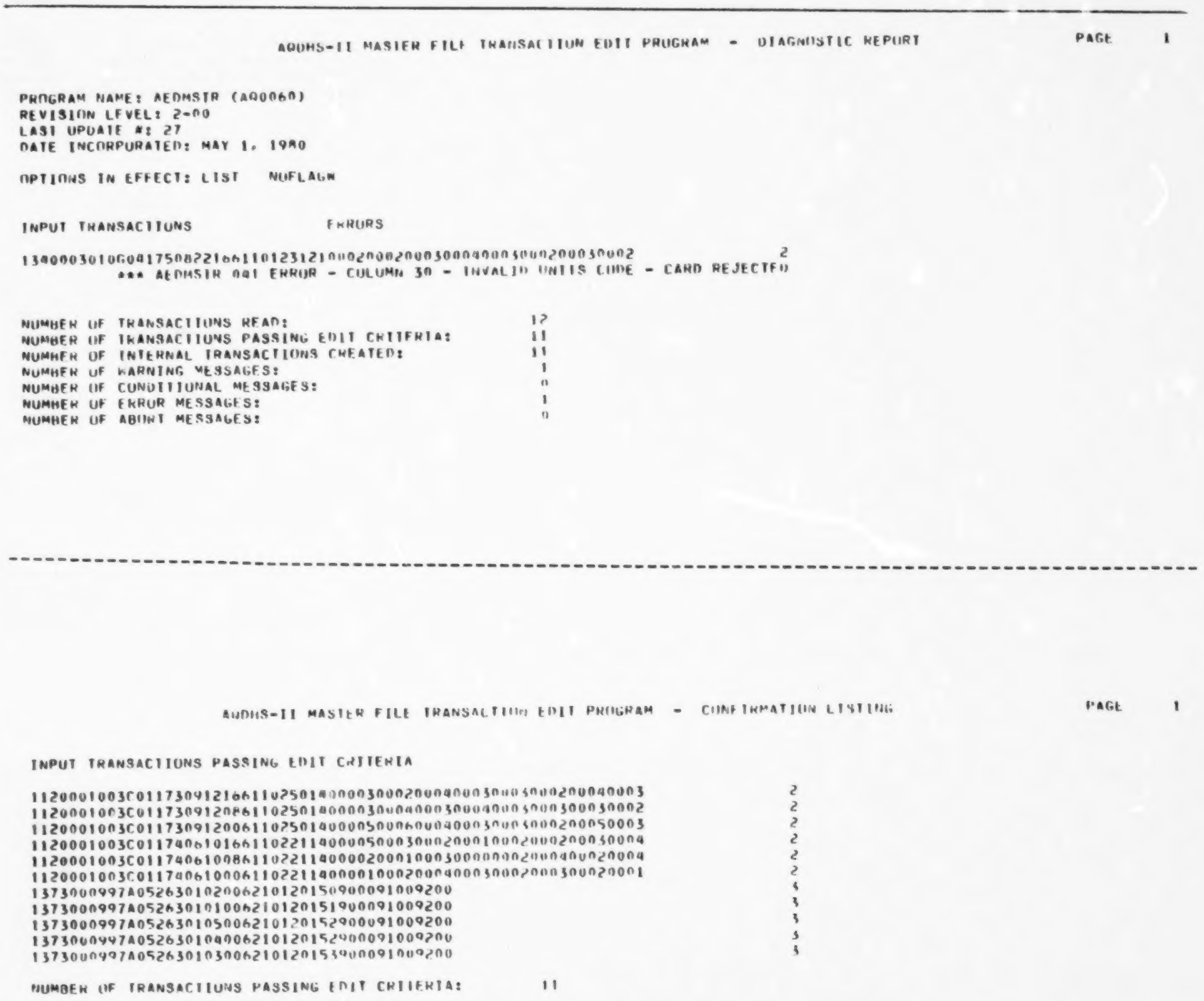
```
//EPALMH10 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* THIS RUN EXERCISES THE THREE SINGLE-FILE LIST OPTIONS SEPARATELY;
//* 'LISTTRAN' LISTS ONLY THE INPUT INTERNAL TRANSACTION FILE;
//* 'LISTOLD' LISTS ONLY THE INPUT MASTER FILE RECORDS THAT ARE
//* AFFECTED BY THE UPDATE; 'LISTNEW' LISTS ONLY THE OUTPUT MASTER FILE
//* RECORDS THAT ARE ADDED OR CHANGED IN THE UPDATE
//*
//ADHOC10A EXEC AQEDT10,
//             DISP='NEW,PASS',
//             PRIMARY=1,
//             SECNDRY=1,
//             TRANS=TEMPTRNS,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSITE01
//*
//* THE AQDHS-II TRANSACTIONS ARE EDITED; THE OUTPUT INTERNAL TRANSACTION
//* FILE IS PASSED ON TO THE FILE MAINTENANCE STEPS FOLLOWING
//*
//PRESORT.INPUT DD *
1340003010G04175082216611012312100020002000300040003000200030002               2
1120001003C01174061000611022114000010002000400030002000300020001               2
1120001003C01174061008611022114000020001000300000002000400020004               2
1120001003C01174061016611022114000050003000200010002000200030004               2
1120001003C01173091200611025014000050006000400030003000200050003               2
1120001003C01173091208611025014000030004000300040003000300030002               2
1120001003C01173091216611025014000030002000400030003000200040003               2
1373000997A052630101006210120151900091009200                                   3
1373000997A052630102006210120150900091009200                                   3
1373000997A052630103006210120153900091009200                                   3
1373000997A052630104006210120152900091009200                                   3
1373000997A052630105006210120152900091009200                                   3
/*
//EDIT.OPTIONS DD *
LIST
/*
//ADHOC10B EXEC AQFMM10,
//             OLDMSTR=AQARCM02,
//             DISP1='OLD,PASS',
//             TRANS=TEMPTRNS
//*
//* THE THREE FILE MAINTENANCE STEPS IN THIS RUN ALL USE AS INPUT THE
//* LATEST ARCHIVED MASTER FILE AND THE INTERNAL TRANSACTIONS CREATED IN
//* STEP A; IN THIS STEP THE OPTION CHOSEN IS TO LIST ONLY THE INTERNAL
//* TRANSACTIONS
//*
//UPDATE.AQSNEWMS DD DUMMY
//UPDATE.OPTIONS DD *
LISTTRAN
/*
//ADHOC10C EXEC AQFMM10,
//             OLDMSTR=AQARCM02,
//             DISP1='OLD,PASS',
//             TRANS=TEMPTRNS
//*
//* ONLY THE INPUT MASTER FILE RECORDS AFFECTED BY THE UPDATE ARE
//* LISTED IN THIS STEP
//*
//UPDATE.AQSNEWMS DD DUMMY
//UPDATE.OPTIONS DD *
LISTOLD
/*
//ADHOC10D EXEC AQFMM10,
//             OLDMSTR=AQARCM02,
//             DISP1='OLD,PASS',
//             TRANS=TEMPTRNS
//*
//* ONLY THE OUTPUT MASTER FILE RECORDS AFFECTED BY THE UPDATE ARE
//* LISTED IN THIS STEP
//*
//UPDATE.AQSNEWMS DD DUMMY
//UPDATE.OPTIONS DD *
LISTNEW
```

Figure AHT10-1.  Run Stream

```
                                   AQDHS-II MASTER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT

PROGRAM NAME: ASRTRAN (AQ0370)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980



NUMBER OF INPUT TRANSACTIONS:                      12
NUMBER OF OUTPUT TRANSACTIONS:                     12
NUMBER OF INPUT FORM 3 TRANSACTIONS:                0
NUMBER OF OUTPUT FORM 3 TRANSACTIONS:               0
```

(Page 1 of 2)

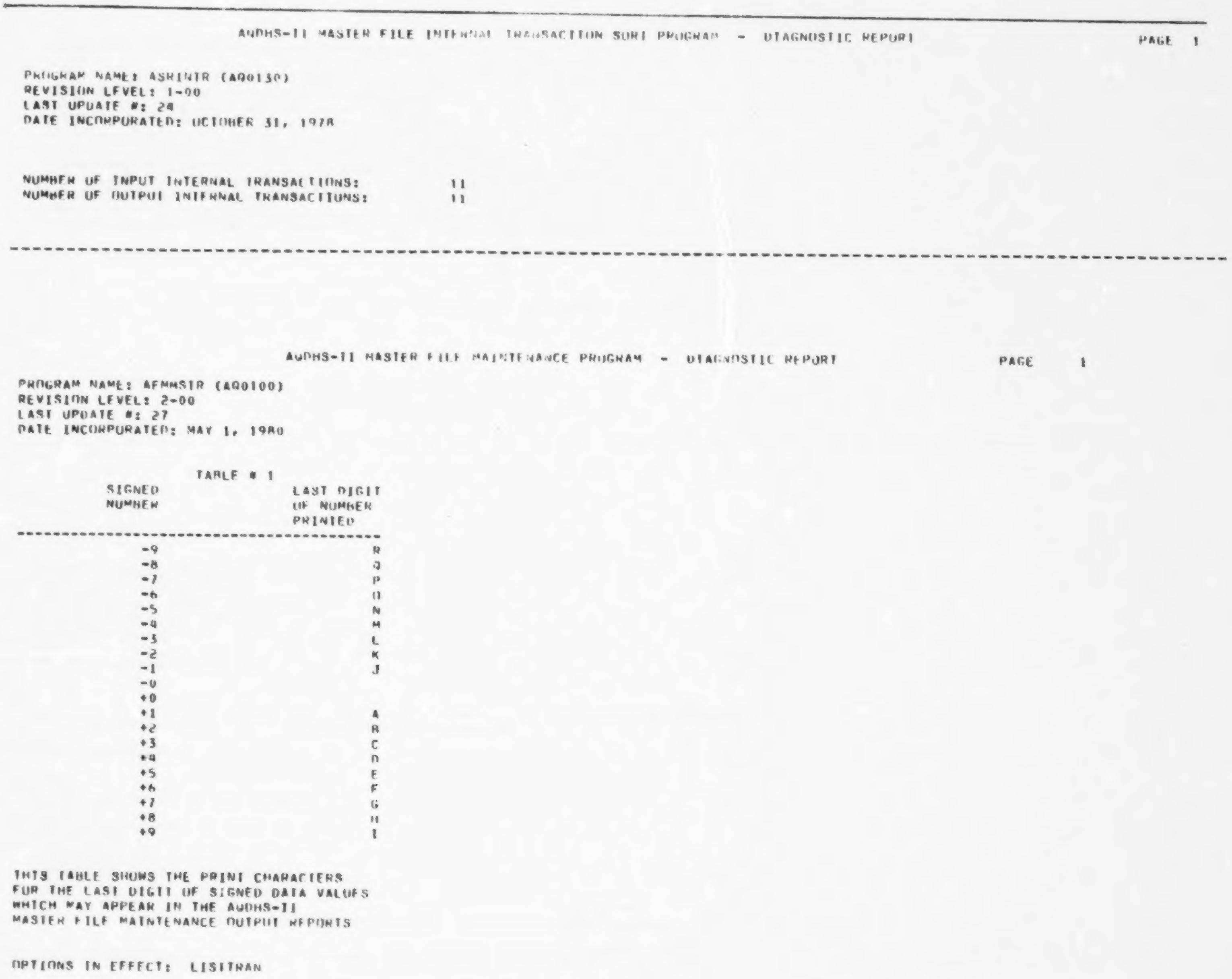
Figure AHT10-2. Procedure AQEDT10 -- program ASRTRAN



```
                    AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     1

PROGRAM NAME: AEDMSTR (AQ0060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: LIST   NOFLAGW


INPUT TRANSACTIONS              ERRORS

1340003010G04175082216611012312100020002000300040003000200030002                    2
          *** AEDMSTR 001 ERROR - COLUMN 30 - INVALID UNITS CODE - CARD REJECTED


NUMBER OF TRANSACTIONS READ:                          12
NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:         11
NUMBER OF INTERNAL TRANSACTIONS CREATED:              11
NUMBER OF WARNING MESSAGES:                            1
NUMBER OF CONDITIONAL MESSAGES:                        0
NUMBER OF ERROR MESSAGES:                              1
NUMBER OF ABORT MESSAGES:                              0




----------------------------------------------------------------------------------------------------------------



                    AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  CONFIRMATION LISTING                 PAGE     1

INPUT TRANSACTIONS PASSING EDIT CRITERIA

1120001003C011730912166110250140000300020004000300030002000400 03                   2
1120001003C011730912086110250140000300040003000400030003000300 02                   2
1120001003C011730912006110250140000500060004000300030002000500 03                   2
1120001003C011740610166110221140000500030002000100020002000300 04                   2
1120001003C011740610086110221140000200010003000000020004000200 04                   2
1120001003C011740610006110221140000100020004000300020003000200 01                   2
1373000997A052630102006210120150900091009200                                        3
1373000997A052630101006210120151900091009200                                        3
1373000997A052630105006210120152900091009200                                        3
1373000997A052630104006210120152900091009200                                        3
1373000997A052630103006210120153900091009200                                        3

NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:         11
```

(Page 2 of 2)

Figure AHT10-2 - continued.  Procedure AQEDT10 -- program AEDMSTR



```
              AQDHS-II MASTER FILE INTERNAL TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                       PAGE  1

PROGRAM NAME: ASRINTR (AQ0130)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT INTERNAL TRANSACTIONS:          11
NUMBER OF OUTPUT INTERNAL TRANSACTIONS:         11

----------------------------------------------------------------------------------------------------------------------



                 AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                 PAGE     1
PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


                   TABLE # 1
            SIGNED                  LAST DIGIT
            NUMBER                  OF NUMBER
                                    PRINTED
-----------------------------------------
                -9                        R
                -8                        Q
                -7                        P
                -6                        O
                -5                        N
                -4                        M
                -3                        L
                -2                        K
                -1                        J
                -0
                +0
                +1                        A
                +2                        B
                +3                        C
                +4                        D
                +5                        E
                +6                        F
                +7                        G
                +8                        H
                +9                        I

THIS TABLE SHOWS THE PRINT CHARACTERS
FOR THE LAST DIGIT OF SIGNED DATA VALUES
WHICH MAY APPEAR IN THE AQDHS-II
MASTER FILE MAINTENANCE OUTPUT REPORTS

OPTIONS IN EFFECT:  LISTTRAN
```

(Page 1 of 3)

Figure AHT10-3. Procedure AQFMM10 -- programs ASRINTR and AFMMSTR

```
                          AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                    PAGE     2

NUMBER OF INPUT INTERNAL TRANSACTIONS:                        11
NUMBER OF INPUT MASTER FILE RECORDS:                          42
NUMBER OF MASTER FILE RECORDS FLAGGED FOR DELETION:            0
NUMBER OF MASTER FILE RECORDS ADDED:                           2
NUMBER OF OUTPUT MASTER FILE RECORDS:                         44
NUMBER OF WARNING MESSAGES:                                    0
NUMBER OF CONDITIONAL MESSAGES:                                0
NUMBER OF ERROR MESSAGES:                                      0
NUMBER OF ABORT MESSAGES:                                      0
NUMBER OF DISASTER MESSAGES:                                   0

PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 2 of 3)

Figure AHT10-3 - continued.  Procedure AQFMM10 -- program AFMMSTR

```
              AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  INTERNAL TRANSACTION CONFIRMATION LISTING        PAGE    1

INTERNAL TRANSACTION                   ACTION

21      1206001400001003C011736110250140912002            00800050006000400030003000200050003
                                       *** ADDED

21      1206001400001003C011736110250140912082            00800030004000300040003000300030002
                                       *** ADDED

21      1206001400001003C011736110250140912162            00800030002000400030003000200040003
                                       *** ADDED

21      1206001400001003C011746110221140610002            00800010002000400030002000300020001
                                       *** ADDED

21      1206001400001003C011746110221140610082            00800020001000300000002000400020004
                                       *** ADDED

21      1206001400001003C011746110221140610162            00800050003000200010002000200030004
                                       *** ADDED

31      3718630203000997A05263621012015010100             103900091009200
                                       *** CHANGED

31      3718630203000997A05263621012015010200             003900091009200
                                       *** CHANGED

31      3718630203000997A05263621012015010300             303900091009200
                                       *** CHANGED

31      3718630203000997A05263621012015010400             203900091009200
                                       *** CHANGED

31      3718630203000997A05263621012015010500             203900091009200
                                       *** CHANGED

NUMBER OF INPUT INTERNAL TRANSACTIONS:            11
```

(Page 3 of 3)

Figure AHT10-3 - continued.  Procedure AQFMM10 -- program AFMMSTR

```
                    AQDHS-II MASTER FILE INTERNAL TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                        PAGE  1

PROGRAM NAME: ASRINTR (AQ0130)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT INTERNAL TRANSACTIONS:          11
NUMBER OF OUTPUT INTERNAL TRANSACTIONS:         11


----------------------------------------------------------------------------------------------------------------------------



                       AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                     PAGE     1

PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                  TABLE # 1
         SIGNED                        LAST DIGIT
         NUMBER                        OF NUMBER
                                       PRINTED
------------------------------------------------
                -9                           R
                -8                           Q
                -7                           P
                -6                           O
                -5                           N
                -4                           M
                -3                           L
                -2                           K
                -1                           J
                -0
                +0
                +1                           A
                +2                           B
                +3                           C
                +4                           D
                +5                           E
                +6                           F
                +7                           G
                +8                           H
                +9                           I

THIS TABLE SHOWS THE PRINT CHARACTERS
FOR THE LAST DIGIT OF SIGNED DATA VALUES
WHICH MAY APPEAR IN THE AQDHS-II
MASTER FILE MAINTENANCE OUTPUT REPORTS


OPTIONS IN EFFECT:  LISTOLD
```

(Page 1 of 2)

Figure AHT10-4. Procedure AQFMM10 -- programs ASRINTR and AFMMSTR

```
                    AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    2

NUMBER OF INPUT INTERNAL TRANSACTIONS:                          11
NUMBER OF INPUT MASTER FILE RECORDS:                            42
NUMBER OF MASTER FILE RECORDS FLAGGED FOR DELETION:              0
NUMBER OF MASTER FILE RECORDS ADDED:                             2
NUMBER OF OUTPUT MASTER FILE RECORDS:                           44
NUMBER OF WARNING MESSAGES:                                      0
NUMBER OF CONDITIONAL MESSAGES:                                  0
NUMBER OF ERROR MESSAGES:                                        0
NUMBER OF ABORT MESSAGES:                                        0
NUMBER OF DISASTER MESSAGES:                                     0

PROGRAM NAME: AFMMSTR (AQU100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


-------------------------------------------------------------------------------------------------------------------


            AQDHS-II MASTER FILE MAINTENANCE PROGRAM - INPUT MASTER FILE CONFIRMATION LISTING          PAGE    1

FIXED SEGMENT                                                                                          ACTION
            REPEATING DATA

21S     37186302030000997A05263621012015010100             12                                         CHANGED
                   S09000S09100S09200S09300S09400S09500S09600S09700S09800S09900S09901S09902

21S     37186302030000997A05263621012015010200            12                                         CHANGED
                   S19000S19100S19200S19300S19400S19500S19600S19700S19800S19900S19901S19902

21S     37186302030000997A05263621012015010300             12                                         CHANGED
                   S29000S29100S29200S29300S29400S29500S29600S29700S29800S29900S29901S29902

21S     37186302030000997A05263621012015010400             12                                         CHANGED
                   S39000S39100S39200S39300S39400S39500S39600S39700S39800S39900S39901S39902

21S     37186302030000997A05263621012015010500             12                                         CHANGED
                   S49000S49100S49200S49300S49400S49500S49600S49700S49800S49900S49901S49902

NUMBER OF INPUT MASTER FILE RECORDS:                        42
NUMBER OF INPUT MASTER FILE RECORDS LISTED:                  5
```

(Page 2 of 2)

Figure AHT10-4 - continued. Procedure AQFMM10 -- program AFMMSTR

```
                    AQDHS-II MASTER FILE INTERNAL TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                    PAGE   1

PROGRAM NAME: ASRINTR (AQ0130)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT INTERNAL TRANSACTIONS:           11
NUMBER OF OUTPUT INTERNAL TRANSACTIONS:          11



------------------------------------------------------------------------------------------------------------------------


                         AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                PAGE      1

PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                     TABLE # 1
         SIGNED                     LAST DIGIT
         NUMBER                     OF NUMBER
                                    PRINTED
---------------------------------------------
                -9                          R
                -8                          Q
                -7                          P
                -6                          O
                -5                          N
                -4                          M
                -3                          L
                -2                          K
                -1                          J
                -0
                +0
                +1                          A
                +2                          B
                +3                          C
                +4                          D
                +5                          E
                +6                          F
                +7                          G
                +8                          H
                +9                          I

THIS TABLE SHOWS THE PRINT CHARACTERS
FOR THE LAST DIGIT OF SIGNED DATA VALUES
WHICH MAY APPEAR IN THE AQDHS-II
MASTER FILE MAINTENANCE OUTPUT REPORTS

OPTIONS IN EFFECT:  LISTNEW
```

(Page 1 of 2)

Figure AHT10-5. Procedure AQFMM10 -- programs ASRINTR and AFMMSTR

```
                         AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                PAGE     2

NUMBER OF INPUT INTERNAL TRANSACTIONS:                       11
NUMBER OF INPUT MASTER FILE RECORDS:                         42
NUMBER OF MASTER FILE RECORDS FLAGGED FOR DELETION:           0
NUMBER OF MASTER FILE RECORDS ADDED:                          2
NUMBER OF OUTPUT MASTER FILE RECORDS:                        44
NUMBER OF WARNING MESSAGES:                                   0
NUMBER OF CONDITIONAL MESSAGES:                               0
NUMBER OF ERROR MESSAGES:                                     0
NUMBER OF ABORT MESSAGES:                                     0
NUMBER OF DISASTER MESSAGES:                                  0

PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

-------------------------------------------------------------------------------------------------------------------


             AQDHS-II MASTER FILE MAINTENANCE PROGRAM - OUTPUT MASTER FILE CONFIRMATION LISTING          PAGE     1

FIXED SEGMENT                                                                                            ACTION
                 REPEATING DATA

21N     12060014000010O3C01173611025014091200 2            24                                             ADDED
                 A00005A00006A00004A00003A00003A00002A00005A00003A00003A00004A00003A00004A00003A00003A00003A00002
                 A00003A00002A00004A00003A00003A00002A00004A00003

21N     1206001400001003C01174611022114061000 2            24                                             ADDED
                 A00001A00002A00004A00003A00002A00003A00002A00001A00002A00001A00003A00000A00002A00004A00002A00004
                 A00005A00003A00002A00001A00002A00002A00003A00004

31N     371863020300099 7A052636210120150101 00            12                                             CHANGED
                 C19000C19100C19200S09300S09400S09500S09600S09700S09800S09900S09901S09902

31N     3718630203000997A052636210120150102 00             12                                             CHANGED
                 C09000C09100C09200S19300S19400S19500S19600S19700S19800S19900S19901S19902

31N     3718630203000997A052636210120150103 00             12                                             CHANGED
                 C39000C39100C39200S29300S29400S29500S29600S29700S29800S29900S29901S29902

31N     3718630203000997A052636210120150104 00             12                                             CHANGED
                 C29000C29100C29200S39300S39400S39500S39600S39700S39800S39900S39901S39902

31N     3718630203000997A052636210120150105 00             12                                             CHANGED
                 C29000C29100C29200S49300S49400S49500S49600S49700S49800S49900S49901S49902

NUMBER OF OUTPUT MASTER FILE RECORDS:                       44
NUMBER OF OUTPUT MASTER FILE RECORDS LISTED:                 7
```

(Page 2 of 2)

Figure AHT10-5 - continued.  Procedure AQFMM10 -- program AFMMSTR

## AQDHS-II AD HOC TEST 11

## Convert SAROAD Transactions and Update the Master File

This ad hoc test converts SAROAD-format card transactions to AQDHS-II format transactions and then updates the master file with the converted transactions. The present test does in one run what took two runs early in the test series, when the initial master file, AQMST01N, was created from SAROAD transactions in Tests 4 and 5. The SAROAD to AQDHS-II conversion is performed by the program ACVSARD (AQ0010), which is executed by the procedure AQCVT10. The transaction editing and master file maintenance are then done by AEDMSTR (AQ0060) and AFMMSTR (AQ0100) respectively; both of these programs, as well as the sort programs, ASRTRAN (AQ0370) and ASRINTR (AQ0130), are executed by the procedure AQEMM10.

The run stream for this test is contained in Figure AHT11-1. Step A, in which the SAROAD conversion is done, uses the LIST option. This option, which was not used in the other SAROAD conversion run (Test 4), lists each SAROAD input transaction and beneath it the AQDHS-II output transaction or transactions generated from it.

In the SAROAD transaction input file, the first card is a $2 card. This indicates that all the transactions following it are adds (action code of 2). The output AQDHS-II transaction file is assigned a temporary data set name, &&AQTRANS. Sample output from this step appears in Figure AHT11-2.

Step B, the file maintenance step, uses the AQDHS-II transaction data set &&AQTRANS to update the active master file, AQMTST04T. The parameter and site files AQPARM01 and AQSITE01 are used to edit the transactions. The new master file created is named AH11MSTR. Figure AHT11-3 contains sample output from this step.

```
//EPALMH11 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* THIS RUN EXERCISES THE LIST OPTION OF THE SARUAD-TO-AUDHS-II
//* CUNVERTER; UNDER THIS OPTION, EACH INPUT SAROAD TRANSACTIUN IS LISTED
//* AND FOLLOWED IN THE LISTING BY ITS ASSOCIATED OUTPUT AQDHS-II
//* TRANSACTIUN(S)
//* IN THE SAME RUN, THESE AQDHS-II TRANSACTIONS ARE USED TU UPDATF THE
//* ACTIVE MASTER FILE
//*
//ADHOC11A EXEC AQCVT10
//*
//* THE SAROAD CONVERTER IS RUN
//*
//CONVERT.OPTIONS DD *
LIST
/*
//CONVERT.INPUT DD *
$2
1373000997A0517708020062101201520067-050-0310071-083-11700610079-1010090006 6-043
1373000997A0517708020062103201520067-050-0310071-083-11700610079-101009000 66-043
1373000997A052770701034310111072000 1
1373000997A05277080200431021107200670050003100710083011700610079010100900066 0043
1373000997A05277080300431021107200670050003100710083011700610079010100900066 0043
1373000997A05277080400431021107200670050003100710083011700610079010100900066 0043
1373000997A05277080500431021107200670050003100710083011700610079010100900066 0043
1373000997A05277080600431021107 2    00500031    0083011700610079010100900066 0043
1373000997A05277080700431021107 2                0083011700610079010100900066 0043
1373000997A052770808004310211072006 7    0031007100830117006100790101009000660043
1373000997A0527708090043102110720067005000310071
1373000997A05277081000431021107 2    00500031    0083011700610079    009000660043
2373000997A05875050100                                          62101201530015
2373000997A05875060100431021107300204310111073020043201110730500621012015 30123
2373000997A05875070100431021107300204310111073020043201110730500621012015 30123
2373000997A0587508010043102110730020             43201110730500621012015301 23
```

(Remainder of transactions omitted)

```
/*
//CONVERT.OUTPUT DD DISP=(NEW,PASS),DSN=&&AQTRANS,UNIT=SYSDA,
// SPACE=(TRK,(10,1))
//ADHOC11B EXEC AQEMM10,
//            OLDMSTR=AQMST04T,
//            NEWMSTR=AH11MSTR,
//            PARMFIL=AQPARM01,
//            SITEFIL=AQSITE01,
//            PRIMARY=1,
//            SECNDRY=1
//*
//* EDIT THE AQDHS-II TRANSACTIONS CREATED IN STEP A,
//* SORT THE RESULTING INTERNAL TRANSACTIONS,
//* AND UPDATE THE MASTER FILE WITH THESE SORTED TRANSACTIONS
//*
//PRESORT.INPUT DD DISP=OLD,DSN=&&AQTRANS
```

Figure AHT11-1. Run Stream

```
                              SAROAD TO AQDHS-II CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                     PAGE     1
PROGRAM NAME: ACVSARD (AQ0010)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


OPTION IN EFFECT: LIST


INPUT (SAROAD)                          OUTPUT (AQDHS-II)

$2

1373000997A0517708020062101201520067-050-0310071-083-11700610079-10100900066-043
                                        1373000997A0517708020062101201520067-050-0310071-083-11700610079               2
                                        1373000997A051770802086210120152-10100900066-043                               2

1373000997A0517708020062103201520067-050-0310071-083-11700610079-10100900066-043
                                        1373000997A0517708020062103201520067-050-0310071-083-11700610079               2
                                        1373000997A051770802086210320152-10100900066-043                               2

1373000997A0527707010343101110720001
*** ACVSARD 006 ERROR - START HOUR INCOMPATIBLE WITH TIME CODE, CARD REJECTED

1373000997A052770802004310211072006700500031007100830117006100790101009000660043
                                        1373000997A0527708020043102110720067005000310071008301170061 0079               2
                                        1373000997A0527708021643102110720101009000660043                               2

1373000997A052770803004310211072006700500031007100830117006100790101009000660043
                                        1373000997A0527708030043102110720067005000310071008301170061 0079               2
                                        1373000997A0527708031643102110720101009000660043                               2

1373000997A052770804004310211072006700500031007100830117006100790101009000660043
                                        1373000997A0527708040043102110720067005000310071008301170061 0079               2
                                        1373000997A0527708041643102110720101009000660043                               2

1373000997A052770805004310211072006700500031007100830117006100790101009000660043
                                        1373000997A0527708050043102110720067005000310071008301170061 0079               2
                                        1373000997A0527708051643102110720101009000660043                               2

1373000997A052770806004310211072    00500031    00830117006100790101009000660043
                                        1373000997A052770806004310211072    00500031    0083011700610079               2
                                        1373000997A0527708061643102110720101009000660043                               2

1373000997A052770807004310211072                00830117006100790101009000660043
                                        1373000997A052770807004310211072                0083011700610079               2
                                        1373000997A0527708071643102110720101009000660043                               2

1373000997A0527708080043102110720067    0031007100830117006100790101009000660043
```

(Page 1 of 2)

Figure AHT11-2. Procedure AQCVT10 -- program ACVSARD

```
                         SAROAD TO AQDHS-II CONVERSION PROGRAM  -  DIAGNOSTIC REPORT                          PAGE    4

INPUT (SAROAD)                               OUTPUT (AQDHS-II)

                                             337A05A6120221281650101003000998OO23                                                  2

337A0586120221281650201                  0030209960500
                                             337A05A6120221281650201                0030209960500                                  2

337A058612022128165030100300099800230030209960500003140992-056003140994-009
                                             337A05A612022128165030100300099800230030209960500003140992-056003140994-009        2

337A058612022128165040100300099812340030209960500003140992-086003140994-009
                                             337A05A612022128165040100300099812340030209960500003140992-086003140994-009        2

337A058612022128165050100300099812340030209960500003140992-086003140994-012
                                             337A05A612022128165050100300099812340030209960500003140992-086003140994-012        2

337A058612022128165060100300099812990030209960500003140992-000003140994-012
                                             337A05A612022128165060100300099812990030209960500003140992-000003140994-012        2

337A058612022128165070100300099812990030209960500003140992-000003140994-014
                                             337A05A612022128165070100300099812990030209960500003140992-000003140994-014        2

337A058612022128165080100300099811110030209960511003140992-000003140994-014
                                             337A05A612022128165080100300099811110030209960511003140992-000003140994-014        2

337A05861202212816509010030009981111                     003140994-017
                                             337A05A61202212816509010030009981111                     003140994-017        2

337A0586120221281651001                          003140992-000
                                             337A05A6120221281651001                003140992-000                          2

337A0586120221281651101                                   003140994-014
                                             337A05A6120221281651101                                  003140994-014        2

337A05861202212816512010030009981111             003140992-000
                                             337A05A61202212816512010030009981111       003140992-000                          2

NUMBER OF INPUT SAROAD TRANSACTIONS:          52
NUMBER OF $ACTION CARDS:                       1
NUMBER OF AQDHS-II TRANSACTIONS WRITTEN:      51
NUMBER OF DIAGNOSTIC MESSAGES:                 1

PROGRAM NAME: ACVSARD (AQ0010)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978
```

(Page 2 of 2)

Figure AHT11-2 - continued. Procedure AQCVT10 -- program ACVSARD

```
                         AQMMS-II MASTER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT

PROGRAM NAME: ASRTRAN (AQ0370)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980



NUMBER OF INPUT TRANSACTIONS:                        61
NUMBER OF OUTPUT TRANSACTIONS:                       96
NUMBER OF INPUT FORM 3 TRANSACTIONS:                 17
NUMBER OF OUTPUT FORM 3 TRANSACTIONS:                52
```

(Page 1 of 5)

Figure AHT11-3. Procedure AQEMM10 -- program ASRTRAN

```
                    AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT                      PAGE    1

PROGRAM NAME: AEDMSTR (AQ0060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: DEFAULT (NOLIST NOFLAGW)


INPUT TRANSACTIONS                 ERRORS
         *** AEDMSTR 046 CONDITIONAL - MISSING OR INVALID OPTION CARD - DEFAULT OPTIONS USED


NUMBER OF TRANSACTIONS READ:                        96
NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:       96
NUMBER OF INTERNAL TRANSACTIONS CREATED:           122
NUMBER OF WARNING MESSAGES:                         42
NUMBER OF CONDITIONAL MESSAGES:                      1
NUMBER OF ERROR MESSAGES:                            0
NUMBER OF ABORT MESSAGES:                            0
```

(Page 2 of 5)

Figure AHT11-3 - continued. Procedure AQEMM10 -- program AEDMSTR

```
                     AQDHS-II MASTER FILE INTERNAL TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                              PAGE  1

PROGRAM NAME: ASRINTR (AQ0130)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT INTERNAL TRANSACTIONS:         122
NUMBER OF OUTPUT INTERNAL TRANSACTIONS:        122
```

(Page 3 of 5)

Figure AHT11-3 - continued. Procedure AQEMM10 -- program ASRINTR

```
                              AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                  PAGE     1
PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                 TABLE # 1
        SIGNED                     LAST DIGIT
        NUMBER                     OF NUMBER
                                   PRINTED
-----------------------------------------------
             -9                              R
             -8                              Q
             -7                              P
             -6                              O
             -5                              N
             -4                              M
             -3                              L
             -2                              K
             -1                              J
             -0
             +0
             +1                              A
             +2                              B
             +3                              C
             +4                              D
             +5                              E
             +6                              F
             +7                              G
             +8                              H
             +9                              I

THIS TABLE SHOWS THE PRINT CHARACTERS
FOR THE LAST DIGIT OF SIGNED DATA VALUES
WHICH MAY APPEAR IN THE AQDHS-II
MASTER FILE MAINTENANCE OUTPUT REPORTS

OPTIONS IN EFFECT:  DEFAULT (NOLIST NOFLAGN)

        *** AFMMSTR 005 CONDITIONAL - MISSING OR INVALID CARD - DEFAULT OPTIONS (NOLIST NOFLAGN) USED
```

(Page 4 of 5)

Figure AHT11-3 - continued.  Procedure AQEMM10 -- program AFMMSTR

```
                         AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    2

TRANSACTION                    ERRORS/ACTION

21       37186302030009997A05277431021107080200          208006700500031007100830117006100079
            *** AFMMSTR 001 ERROR - READING 02 - ATTEMPT TO ADD DATA TO EXISTING READING - DATA REJECTED


NUMBER OF INPUT INTERNAL TRANSACTIONS:                    122
NUMBER OF INPUT MASTER FILE RECORDS:                      526
NUMBER OF MASTER FILE RECORDS FLAGGED FOR DELETION:         0
NUMBER OF MASTER FILE RECORDS ADDED:                       37
NUMBER OF OUTPUT MASTER FILE RECORDS:                     563
NUMBER OF WARNING MESSAGES:                                 0
NUMBER OF CONDITIONAL MESSAGES:                             1
NUMBER OF ERROR MESSAGES:                                   1
NUMBER OF ABORT MESSAGES:                                   0
NUMBER OF DISASTER MESSAGES:                                0


PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 5 of 5)

Figure AHT11-3 - continued.  Procedure AQEMM10 -- program AFMMSTR

## AQDHS-II AD HOC TEST 12

### Perform a Total-Time-Period Statistical Analysis on a Multi-Year File

The purpose of this ad hoc test is to emphasize the requirement of running a pre-sort when a master file with more than one calendar year of data is used for a total-time-period statistical analysis. An answer file containing 1976 and 1977 data is retrieved for this purpose using the procedure AQRTM10. The unsorted answer file is input to the statistical analysis program series of ASTPRLM (AQ0190), ASTMSST (AQ0200), and ARPMSST (AQ0270); these three programs are executed by the procedure AQRPM10. The total-time-period option is specified in this step. Next the answer file is pre-sorted with the procedure AQSRM10, which executes the master file sort program, ASRMSTR (AQ0140). The sorted file is then input to another execution of the statistical analysis procedure with the total-time-period option.

Test 13 contains a description of the retrieval programs. The present ad hoc test uses standard AQDHS-II retrieval language statements. The subject in each of the retrieval statements, KEY-1, references a group of master file fields, including all site-related fields, the time code, and the year. Here the retrieval statements are requesting that all 1976 and 1977 records with daily data (time code of 8) for a specific site be retrieved.

Test 8 describes the master file sort program, ASRMSTR (AQ0140). Test 10 describes the three statistical analysis programs.

The Ad Hoc Test 12 run stream appears in Figure AHT12-1. In the retrieval step (Step A), the active master file, AQMST045, is the input file and the answer file is named TEMPRETR. Sample output from this step is shown in Figure AHT12-2. Step B consists of a statistical analysis on TEMPRETR, the unsorted file. The user-designated option for the preliminary statistics program is TOTAL; the total-time-period option is also the default if no option card is included in the stream. Notice in the statistical analysis report from this step (Figure AHT12-3) that one of the parameters has two sets of statistics, one for 1976 and one for 1977. Under the total-time-period option, the parameter should have only one set of statistics covering the entire period of data collection. Thus, this report is invalid.

To remedy this situation, a pre-sort for the answer file, TEMPRETR, is used in Step C. The option used is STAT. The sorted file is named TEMPSORT. This latter file is input to another execution of the statistical analysis procedure in Step D. Again, the user option is TOTAL. This time, each parameter does have a single set of statistics in the statistical analysis report, which demonstrates that a pre-sort is required when a total-time-period option is used for a statistical analysis of a multi-year file. Output samples from this sort step and statistical analysis step are shown in Figure AHT12-4 and Figure AHT12-5, respectively.

```
//EPALMH12 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=4,MSGLEVEL=(1,1)
//*
//* THIS TEST DEMONSTRATES THE NECESSITY OF PRESORTING A
//* MULTI-YEAR ANSWER FILE THAT IS TO BE STATISTICALLY ANALYZED
//* WITH THE TOTAL-TIME-PERIOD OPTION; THE RETRIEVED FILE WILL
//* BE ANALYZED FIRST WITHOUT PRESORTING AND THEN WITH
//* PRESORTING
//*
//ADHOC12A EXEC AQRTM10,
//             MSTRFIL=AQMS104T,
//             ANSWRFL=TEMPRETR,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* THE FILE RETRIEVED IN THIS STEP CONTAINS 1976 AND 1977 DATA FROM
//* A SINGLE SITE WITH 2 PARAMETERS
//*
//COMPILE.INPUT DD *
$$SELECT
KEY-1                       = '341702980000100 4A06876'                OR
KEY-1                       = '341702980000100 4A06877'
$SEND
/*
//ADHOC12B EXEC AQRPM10,
//             MSTRFIL=TEMPRETR,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSTESRT
//*
//* IN THIS STEP, THE STATISTICAL ANALYSIS IS PERFORMED ON THE ANSWER FILE
//* WITHOUT PRESORTING; THE STATISTICAL REPORT GENERATES, FOR EACH
//* SITE-PARAMETER GROUP, A SEPARATE SET OF STATISTICS FOR EACH YEAR,
//* EVEN THOUGH THE TOTAL-TIME-PERIOD OPTION IS SPECIFIED
//*
//PRELIM.OPTIONS DD *
TOTAL
/*
//ADHOC12C EXEC AQSRM10,
//             MSTRFIL=TEMPRETR,
//             SORTFIL=TEMPSORT,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* THE RETRIEVED FILE IS NOW PRESORTED
//*
//SORT.OPTIONS DD *
     STAT
/*
//ADHOC12D EXEC AQRPM10,
//             MSTRFIL=TEMPSORT,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSTESRT
//*
//* THE STATISTICAL ANALYSIS IS NOW RUN ON THE SORTED FILE; THIS TIME
//* A TRUE TOTAL-TIME-PERIOD STATISTICAL REPORT IS GENERATED, WITH
//* A SINGLE SET OF STATISTICS ENCOMPASSING THAT TOTAL PERIOD FOR EACH
//* PARAMETER WITHIN THE SITE
//*
//PRELIM.OPTIONS DD *
TOTAL
/*
```

Figure AHT12-1. Run Stream

```
                    AQDHS-II RETRIEVAL LANGUAGE PROCESSOR PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ARTLNGP (AQ0110)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


INPUT (CONTROL CARDS):

$$SELECT
KEY-1                  = '3417029800001004A06876'              OR
KEY-1                  = '3417029800001004A06877'
$$END


NUMBER OF CONTROL CARDS READ:                      4
NUMBER OF RETRIEVAL SKELETON RECORDS READ:     1,140
NUMBER OF RETRIEVAL SOURCE RECORDS WRITTEN:    1,183
NUMBER OF CONDITIONAL MESSAGES:                    0
NUMBER OF ERROR MESSAGES:                          0
NUMBER OF ABORT MESSAGES:                          0



------------------------------------------------------------------------------------------------------------



                    AQDHS-II GENERATED RETRIEVAL PROGRAM  -  DIAGNOSTIC REPORT                    PAGE    1

PROGRAM NAME: ARTGENR (AQ0120)
REVISION LEVEL: 1-01
LAST UPDATE #: 26
DATE INCORPORATED: DECEMBER 28, 1979


NUMBER OF MASTER FILE RECORDS READ:              526
NUMBER OF ANSWER FILE RECORDS WRITTEN:             7
NUMBER OF CONDITIONAL MESSAGES:                    0
NUMBER OF ABORT MESSAGES:                          0
```

Figure AHT12-2. Procedure AQRTM10 -- programs ARTLNGP and ARTGENR

```
                    AQDHS-II PRELIMINARY STATISTICS PROGRAM  -  DIAGNOSTIC REPORT                          PAGE     1

PROGRAM NAME: ASTPRLM (AQ0190)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: TOTAL


NUMBER OF MASTER FILE RECORDS READ:                              7
NUMBER OF MASTER FILE RECORDS WITH COMPOSITE DATA:               0
NUMBER OF PARAMETER FILE RECORDS READ:                          89
NUMBER OF STATISTICS RAW DATA FILE RECORDS WRITTEN:             11
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS WRITTEN:           5
NUMBER OF DIAGNOSTIC MESSAGES:                                   0

-----------------------------------------------------------------------------------------------------------------

                      AQDHS-II STATISTICAL ANALYSIS PROGRAM  -  DIAGNOSTIC REPORT                          PAGE 1
PROGRAM NAME: ASTMSST (AQ0200)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF STATISTICS RAW DATA FILE RECORDS READ:            11
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS READ:          5
NUMBER OF STATISTICS FILE RECORDS WRITTEN:                   9
```

(Page 1 of 3)

Figure AHT12-3. Procedure AQRPM10 -- programs ASTPRLM and ASTMSST

```
                         AQDMS-II STATISTICAL ANALYSIS REPORT PROGRAM  -  DIAGNOSTIC REPORT                              PAGE     1

PROGRAM-NAME: ARPMSST (AQ0270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                         *** ARPMSSI 004 WARNING - OPTION CARD MISSING: DEFAULT VALUES ARE 64 LINES PER PAGE AND FULL SITE BREAK

----------------------------------------------------------------------------------------------------------------------------------




                                          AQDMS-II STATISTICAL ANALYSIS REPORT                                   PAGE     1
                                             ANALYSIS FOR TOTAL TIME PERIOD
                                               STATE (34): NORTH CAROLINA

SITE CODE: 34-0001-004-A-06       AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 2980
AGENCY/PROJECT: A06       SITE ADDRESS: GUM BRANCH ROAD, ONSLOW COUNTY                    CITY: JACKSONVILLE

----------------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                      METHOD OF COLLECTION AND ANALYSIS                          INTERVAL    UNITS                  TIMES
POLLUTANT-METHOD-INTERVAL-UNITS CODE      SAMPLING DATES                                                                       HALF
        PCT   NBR   MIN    MIN                      PERCENTILES                    MAX     2ND     3RD     ARIT   ARIT    GEOM   GEOM   M DEI
        OBS   OBS  DETEC   OBS      10     30     50     70     90     95     99    OBS     MAX     MAX     MEAN  ST DEV   MEAN  ST DEV  SUH
----------------------------------------------------------------------------------------------------------------------------------
TOTAL SUSPENDED PARTICULATE         HI-VOL                      - GRAVIMETRIC                 DAILY        U-GMS/M3 (25DEG C,1013 M-BARS)
11101-91-8-01                              09/01/76 TO 12/31/76
        12.3    15  1.000 6.000     30.    39.    53.    62.    81.   124.   124.  124.0  81.00   71.00   53.73  27.29   45.77  1.975      0

SULFUR DIOXIDE                      GAS BUBBLER                 - PARAROSANILINE-SULFAMIC     DAILY        U-GMS/M3 (25 DEG C,1013 M-BARS
42401-91-8-01                              07/01/76 TO 07/31/76
        16.1     5  5.000 0.0        0.     0.     0.     0.    28.    28.    28.  28.00   0.0     0.0    7.600  11.40   4.053  2.985      4

TOTAL SUSPENDED PARTICULATE         HI-VOL                      - GRAVIMETRIC                 DAILY        U-GMS/M3 (25DEG C,1013 M-BARS)
11101-91-8-01                              01/01/77 TO 02/28/77
        47.5    28  1.000 0.0       35.   455.   455.   455.   455.   455.   964.  964.0  455.0   455.0   400.6  193.3   268.0  4.425      1
```

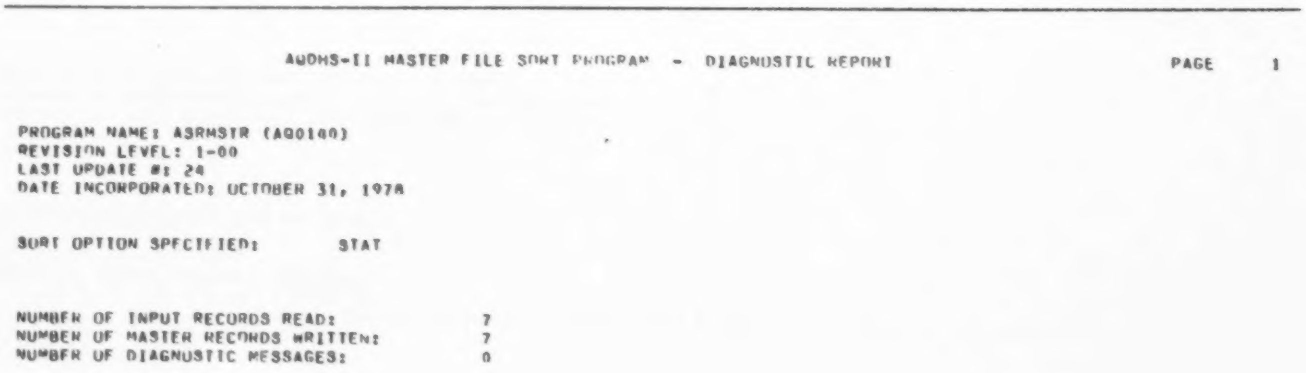
(Page 2 of 3)

Figure AHT12-3 - continued.  Procedure AQRPM10 -- program ARPMSST

```
                                     ARPMSST (A00270) SUMMARY MESSAGES                              PAGE     1

NUMBER OF INPUT RECORDS:                 9
NUMBER OF ERRORS:                        1
NUMBER OF OUTPUT PAGES:                  1

PROGRAM-NAME: ARPMSST (A00270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 3 of 3)

Figure AHT12-3 - continued. Procedure AQRPM10 -- program ARPMSST



```
                AQDMS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE     1

PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


SORT OPTION SPECIFIED:        STAT



NUMBER OF INPUT RECORDS READ:              7
NUMBER OF MASTER RECORDS WRITTEN:          7
NUMBER OF DIAGNOSTIC MESSAGES:             0
```

Figure AHT12-4.  Procedure AQSRM10 -- program ASRMSTR

```
                    AQDHS-II PRELIMINARY STATISTICS PROGRAM  -  DIAGNOSTIC REPORT                         PAGE    1

PROGRAM NAME: ASTPRLM (AQ0190)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
INCORPORATED: MAY 1, 1980

OPTION IN EFFECT: TOTAL


NUMBER OF MASTER FILE RECORDS READ:                             7
NUMBER OF MASTER FILE RECORDS WITH COMPOSITE DATA:              0
NUMBER OF PARAMETER FILE RECORDS READ:                         89
NUMBER OF STATISTICS RAW DATA FILE RECORDS WRITTEN:            11
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS WRITTEN:          4
NUMBER OF DIAGNOSTIC MESSAGES:                                  0



--------------------------------------------------------------------------------------------------------------------



                         AQDHS-II STATISTICAL ANALYSIS PROGRAM  -  DIAGNOSTIC REPORT                            PAGE 1
PROGRAM NAME: ASTMSST (AQ0200)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF STATISTICS RAW DATA FILE RECORDS READ:               11
NUMBER OF PRELIMINARY STATISTICS FILE RECORDS READ:             4
NUMBER OF STATISTICS FILE RECORDS WRITTEN:                      6
```

(Page 1 of 3)

Figure AHT12-5. Procedure AQRPM10 -- programs ASTRPLM and ASTMSST

```
                         AQDHS-II STATISTICAL ANALYSIS REPORT PROGRAM  -  DIAGNOSTIC REPORT                            PAGE     1

PROGRAM-NAME: ARPMSST (AQ0270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                  *** ARPMSST 004 WARNING - OPTION CARD MISSING: DEFAULT VALUES ARE 64 LINES PER PAGE AND FULL SITE BREAK



------------------------------------------------------------------------------------------------------------------------------



                                            AQDHS-II STATISTICAL ANALYSIS REPORT                                PAGE     1
                                              ANALYSIS FOR TOTAL TIME PERIOD
                                                STATE (34): NORTH CAROLINA

SITE CODE: 34-0001-004-A-06       AGENCY TYPE: EPA - ATMOSPHERIC SURVEILLANCE   COUNTY: 2980
AGENCY/PROJECT: A06       SITE ADDRESS: GUM BRANCH ROAD, ONSLOW COUNTY                 CITY: JACKSONVILLE

-----------------------------------------------------------------------------------------------------------------------------
POLLUTANT NAME                  METHOD OF COLLECTION AND ANALYSIS                        INTERVAL    UNITS                  TIMES
POLLUTANT-METHOD-INTERVAL-UNITS CODE     SAMPLING DATES                                                                     HALF
       PCT    NBR   MIN    MIN                  PERCENTILES                     MAX    2ND    3RD    ARIT   ARIT    GEOM   GEOM  # DET
       OBS    OBS  DETEC   OBS      10    30    50    70    90    95    99    OBS    MAX    MAX    MEAN   ST DEV  MEAN   ST DEV SUB
-----------------------------------------------------------------------------------------------------------------------------
TOTAL SUSPENDED PARTICULATE     HI-VOL                      - GRAVIMETRIC               DAILY        U-GMS/M3 (25DEG C,1013 M-BARS)
11101-91-8-01                          09/01/76 TO 02/28/77
       23.8    43  1.000 0.0    31.   62.  455.  455.  455.  455.  964.  964.0  455.0  455.0  279.6  228.6  144.6  4.561    1

SULFUR DIOXIDE                  GAS BUBBLER                 - PARAROSANILINE-SULFAMIC   DAILY        U-GMS/M3 (25 DEG C,1013 M-BARS
42401-91-8-01                          07/01/76 TO 07/31/76
       16.1     5  5.000 0.0     0.    0.    0.    0.   28.   28.   28.  28.00  0.0    0.0    7.600  11.40  4.053  2.945    4
```

(Page 2 of 3)

Figure AHT12-5 - continued.  Procedure AQRPM10 -- program ARPMSST

```
                        ARPMSST (AQ0270) SUMMARY MESSAGES                                    PAGE    1

NUMBER OF INPUT RECORDS:                6
NUMBER OF ERRORS:                       1
NUMBER OF OUTPUT PAGES:                 1

PROGRAM-NAME: ARPMSST (AQ0270)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 3 of 3)

Figure AHT12-5 - continued. Procedure AQRPM10 -- program ARPMSST

## AQDHS-II AD HOC TEST 13

### Test the 'STND' Option of the Master File Sort Program

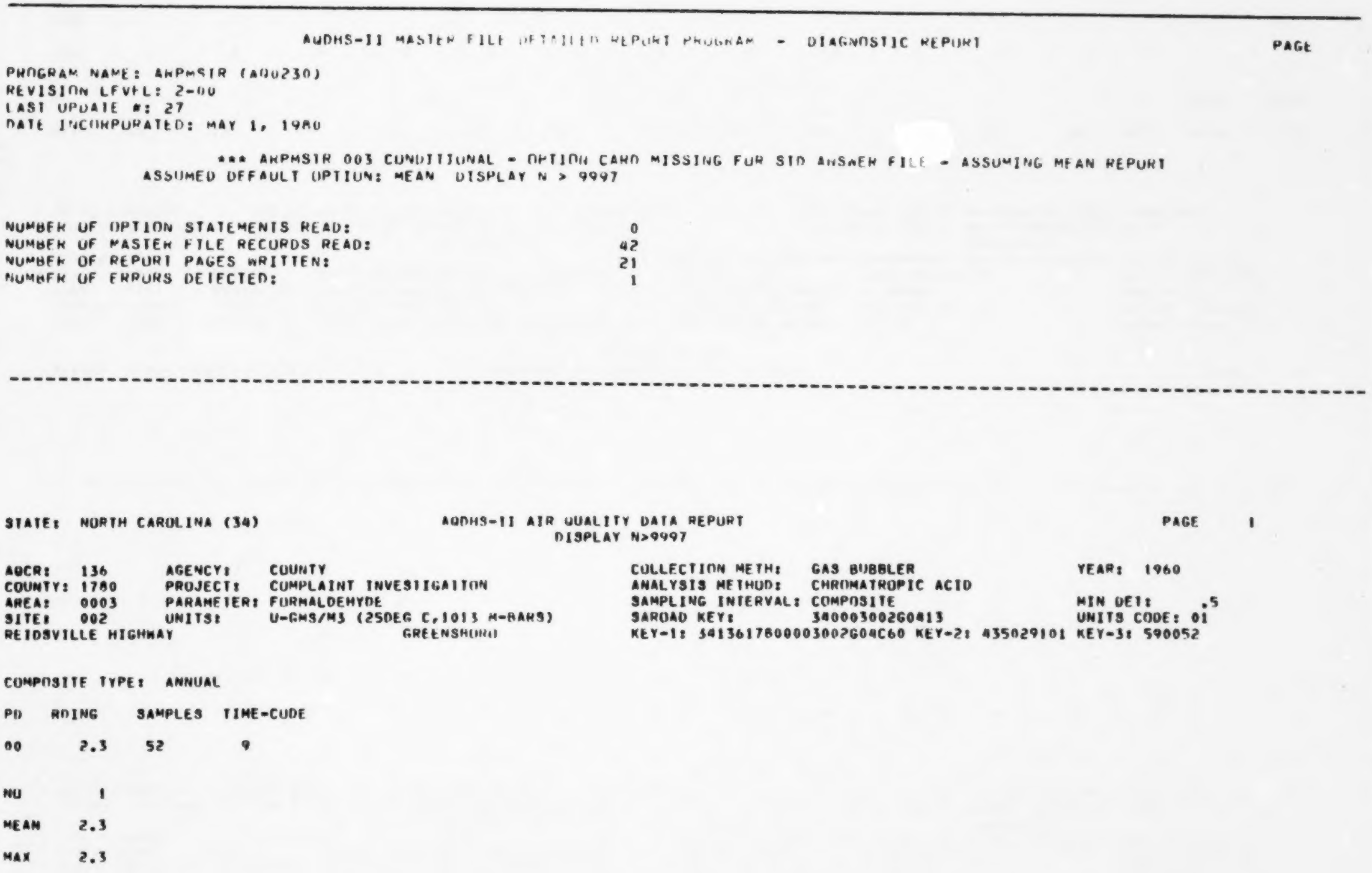
This test demonstrates that the STND option of the master file sort program, ASRMSTR (AQ0140), sorts the master file in the standard sort sequence. To show this the archived file, which is in the standard sort sequence, is listed by the master file detailed report program, ARPMSTR (AQ0230). This program is executed by the procedure AQRPM20. Next, the file is sorted in parameter order by ASRMSTR (AQ0140), which is executed by the procedure AQRPM10. A detailed listing of the sorted file is also made. The report pages of this listing are in a different order from those of the first listing. Finally, the parameter-sorted file is resorted to the standard sort sequence using the STND option of ASRMSTR (AQ0140). The detailed listing of this resorted file indicates that the STND sort restores the file to the normal sort sequence since the pages in this listing are in the same order as those in the listing of the original file.

The master file detailed list program, ARPMSTR (AQ0230), is described in Test 6. The master file sort program, ASRMSTR (AQ0140), is described in Test 8.

Figure AHT13-1 lists the run stream. The first step of the job is to list the archived file, AQARCM02 (created and stored on disk in Test 26). The first three pages of this listing are shown in Figure AHT13-2. The second step is to sort AQARCM02 using the PARM option. The sorted file is named ARCSORT1. Output from this sort step appears in Figure AHT13-3. The third step is to list ARCSORT1. The first three pages of this listing are shown in Figure 13-4. A comparison of this figure with Figure AHT13-2 shows that the parameter sort has changed the order of the records. The fourth step is to sort ARCSORT1 using the STND option. The sorted file is named ARCSORT2. Output from this sort step appears in Figure AHT13-5. The fifth step is to list ARCSORT2 and the first three pages of this listing are shown in Figure AHT13-6. A comparison of this figure with Figure AHT13-2 demonstrates that the STND sort returned the file to standard sort sequence.

```
//EPALMH13 JOB (A087,MLMH,,LMH,,1,35),TIME=2,PRTY=6,MSGLEVEL=(1,1)
//*
//* THIS TEST DEMONSTRATES THAT THE 'STND' OPTION OF THE MASTER FILE
//* SORTER DOES, IN FACT, SORT A MASTER FILE IN NORMAL ORDER;
//* FIRST, A DETAILED LISTING IS MADE OF THE ARCHIVED FILE; SECOND,
//* THE FILE IS RESORTED WITH THE 'PARM' OPTION AND RELISTED; LAST,
//* THE PARM-SORTED FILE IS SORTED BACK INTO ITS ORIGINAL ORDER WITH THE
//* 'STND' OPTION AND LISTED ONCE AGAIN
//*
//ADHOC13A EXEC AQRPM20,
//              MSTRFIL=AQARCM02,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSTESRT,
//              STANFIL=AQSTND01
//*
//* THE INITIAL ARCHIVED FILE IS LISTED
//*
//ADHOC13B EXEC AQSRM10,
//              MSTRFIL=AQARCM02,
//              SORTFIL=ARCSORT1,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* SORT THE ARCHIVED FILE IN 'PARM' ORDER
//*
//SORT.OPTIONS DD *
      PARM
/*
//ADHOC13C EXEC AQRPM20,
//              MSTRFIL=ARCSORT1,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSTESRT,
//              STANFIL=AQSTND01
//*
//* LIST THE PARM-SORTED FILE; NOTE THAT REORDERING OF THE FILE
//* HAS AFFECTED THE ORDER OF THE REPORT PAGES
//*
//ADHOC13D EXEC AQSRM10,
//              MSTRFIL=ARCSORT1,
//              SORTFIL=ARCSORT2,
//              PRIMARY=1,
//              SECNDRY=1
//*
//* RESORT THE PARM-SORTED FILE INTO STANDARD ORDER AGAIN
//*
//SORT.OPTIONS DD *
      STND
/*
//ADHOC13E EXEC AQRPM20,
//              MSTRFIL=ARCSORT2,
//              PARMFIL=AQPARM01,
//              SITEFIL=AQSTESRT,
//              STANFIL=AQSTND01
//*
//* LIST THE STANDARD-SORT FILE; THE ORDER OF THE REPORT PAGES IS IDENTICAL
//* TO THAT OF THE DETAIL LIST OF THE ORIGINAL FILE
//*
```

Figure AHT13-1. Run Stream



```
                        AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                                    PAGE
PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                 *** ARPMSTR 003 CONDITIONAL - OPTION CARD MISSING FOR STD ANSWER FILE - ASSUMING MEAN REPORT
          ASSUMED DEFAULT OPTION: MEAN  DISPLAY N > 9997

NUMBER OF OPTION STATEMENTS READ:                          0
NUMBER OF MASTER FILE RECORDS READ:                       42
NUMBER OF REPORT PAGES WRITTEN:                           21
NUMBER OF ERRORS DETECTED:                                 1



-----------------------------------------------------------------------------------------------------------------------



STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                 PAGE     1
                                                      DISPLAY N>9997

AQCR:    136      AGENCY:    COUNTY                                 COLLECTION METH:   GAS BUBBLER              YEAR:  1960
COUNTY: 1780      PROJECT:   COMPLAINT INVESTIGAITON                ANALYSIS METHOD:   CHROMATROPIC ACID
AREA:   0003      PARAMETER: FORMALDEHYDE                           SAMPLING INTERVAL: COMPOSITE                MIN DET:     .5
SITE:   002       UNITS:     U-GMS/M3 (25DEG C,1013 M-BARS)         SAROAD KEY:        340003002G0413           UNITS CODE: 01
REIDSVILLE HIGHWAY                          GREENSBORO              KEY-1: 3413617800003002G04C60 KEY-2: 435029101 KEY-3: 590052

COMPOSITE TYPE:  ANNUAL

PD    RDING    SAMPLES  TIME-CODE

00      2.3    52          9

NU        1

MEAN    2.3

MAX     2.3
```

(Page 1 of 2)

Figure AHT13-2. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                AQDHS-II AIR QUALITY DATA REPORT                                              PAGE    2
                                                     DISPLAY N>9997

AQCR:    169      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:    HI-VOL                      YEAR:  1965
COUNTY: 0960      PROJECT:    EPISODE MONITORING                     ANALYSIS METHOD:    GRAVIMETRIC                 MONTH:  JANUARY
AREA:    0001     PARAMETER:  TOTAL SUSPENDED PARTICULATE            SAMPLING INTERVAL: 01 HOURS                     MIN DET:      1
SITE:    001      UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)         SAROAD KEY:          340001001A0616             UNITS CODE: 01
YADKIN ROAD                                                          KEY-1: 3416909600001001A06165 KEY-2: 111019101 KEY-3: 010100
                                       PRIMARY                                               SECONDARY
FEDERAL STANDARD      75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                    60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
STATE STANDARD       250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR             120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR


                                                  HOUR

DAY     00       01       02       03       04       05       06       07       08       09       10       11

01       1        1        2        3        5        8     8003     9021

NO       1        1        1        1        1        1        1        1        0        0        0        0

MEAN    1.       1.       2.       3.       5.       8.     8003     9021

MAX      1        1        2        3        5        8     8003     9021


-------------------------------------------------------------------------------------------------------------------------------


STATE:  NORTH CAROLINA (34)                AQDHS-II AIR QUALITY DATA REPORT                                              PAGE    3
                                                     DISPLAY N>9997

AQCR:    169      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:    HI-VOL                      YEAR:  1965
COUNTY: 0960      PROJECT:    EPISODE MONITORING                     ANALYSIS METHOD:    GRAVIMETRIC                 MONTH:  JANUARY
AREA:    0001     PARAMETER:  TOTAL SUSPENDED PARTICULATE            SAMPLING INTERVAL: 01 HOURS                     MIN DET:      1
SITE:    001      UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)         SAROAD KEY:          340001001A0616             UNITS CODE: 01
YADKIN ROAD                                                          KEY-1: 3416909600001001A06165 KEY-2: 111019101 KEY-3: 010100
                                       PRIMARY                                               SECONDARY
FEDERAL STANDARD      75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                    60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
STATE STANDARD       250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR             120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR


                                                  HOUR

DAY     12       13       14       15       16       17       18       19       20       21       22       23    NO.    MEAN    MAX
01
                                                                                                                    8    2131   9021

NO       0        0        0        0        0        0        0        0        0        0        0        0     8

MEAN                                                                                                                     2131

MAX                                                                                                                             9021
```

(Page 2 of 2)

Figure AHT13-2 - continued. Procedure AQPRM20 -- program ARPMSTR

```
                        AQDHS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE    1

PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


SORT OPTION SPECIFIED:       PARM



NUMBER OF INPUT RECORDS READ:             42
NUMBER OF MASTER RECORDS WRITTEN:         42
NUMBER OF DIAGNOSTIC MESSAGES:             0
```

Figure AHT13-3. Procedure AQSRM10 -- program ASRMSTR

```
                         AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                          PAGE    1
PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                *** ARPMSTR 003 CONDITIONAL - OPTION CARD MISSING FOR STD ANSWER FILE - ASSUMING MEAN REPORT
          ASSUMED DEFAULT OPTION: MEAN  DISPLAY N > 9997

NUMBER OF OPTION STATEMENTS READ:                          0
NUMBER OF MASTER FILE RECORDS READ:                       42
NUMBER OF REPORT PAGES WRITTEN:                           21
NUMBER OF ERRORS DETECTED:                                 1


--------------------------------------------------------------------------------------------------------------------


STATE:  NORTH CAROLINA (34)                  AQDHS-II AIR QUALITY DATA REPORT                                 PAGE    1
                                                      DISPLAY N>9997

AQCR:    169       AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE       COLLECTION METH:     HI-VOL                 YEAR:  1965
COUNTY: 0960       PROJECT:    EPISODE MONITORING                   ANALYSIS METHOD:     GRAVIMETRIC            MONTH:  JANUARY
AREA:    0001      PARAMETER:  TOTAL SUSPENDED PARTICULATE          SAMPLING INTERVAL: 01 HOURS                 MIN DET:       1
SITE:    001       UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)       SAROAD KEY:           340001001A0616        UNITS CODE: 01
YADKIN ROAD                                                         KEY-1: 341690960000l001A06165 KEY-2: 111019101 KEY-3: 010100
                                        PRIMARY                                                   SECONDARY
FEDERAL STANDARD       75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                   60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
STATE STANDARD        250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR            120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR

                                                  HOUR
DAY      00       01       02       03       04       05       06       07       08       09       10       11
01        1        1        2        3        5        8     8003     9021

NO        1        1        1        1        1        1        1        1        0        0        0        0
MEAN     1.       1.       2.       3.       5.       8.     8003     9021
MAX       1        1        2        3        5        8     8003     9021
```

(Page 1 of 3)

Figure ATH13-4. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                       AQDHS-II AIR QUALITY DATA REPORT                                          PAGE     2
                                                          DISPLAY N>9997

AQCR:    169      AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE          COLLECTION METH:    HI-VOL                          YEAR:  1965
COUNTY:  0960     PROJECT:    EPISODE MONITORING                      ANALYSIS METHOD:    GRAVIMETRIC                     MONTH:  JANUARY
AREA:    0001     PARAMETER:  TOTAL SUSPENDED PARTICULATE             SAMPLING INTERVAL:  01 HOURS                        MIN DET:       1
SITE:    001      UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)          SAROAD KEY:         340001001A0616                . UNITS CODE: 01
YADKIN ROAD                                                           KEY-1: 34169096000001001A06165 KEY-2: 111019101 KEY-3: 010100
                                             PRIMARY                                                  SECONDARY
FEDERAL STANDARD        75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                       60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
STATE STANDARD         250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR                120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR

                                                       HOUR

DAY     12      13      14      15      16      17      18      19      20      21      22      23     NO.    MEAN    MAX
01                                                                                                      8    2131   9021

NO       0       0       0       0       0       0       0       0       0       0       0       0       8
MEAN                                                                                                         2131
MAX                                                                                                                 9021
```

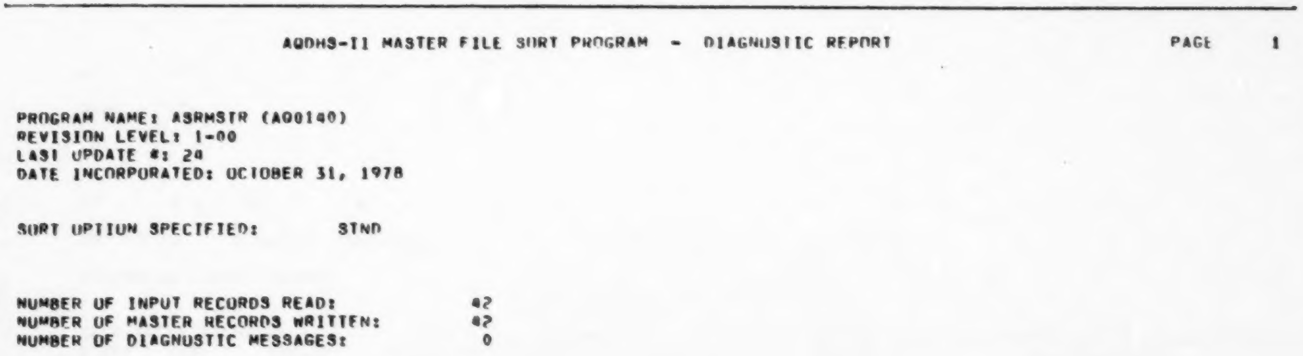
(Page 2 of 3)

Figure AHT13-4 - continued. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                  AQDHS-II AIR QUALITY DATA REPORT                                         PAGE     3
                                                       DISPLAY N>9997

AQCR:    169     AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE       COLLECTION METH:    DAVIS INSTRUMENT           YEAR:  1965
COUNTY: 0960     PROJECT:    EPISODE MONITORING                   ANALYSIS METHOD:    HYDROGEN PEROXIDE          MONTH:  MARCH
AREA:   0001     PARAMETER:  SULFUR DIOXIDE                       SAMPLING INTERVAL: 01 HOURS                    MIN DET:   26.2
SITE:    001     UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)       SAROAD KEY:         340001001A0616             UNITS CODE: 01
YADKIN ROAD                                                       KEY-1: 3416909600001001A06165 KEY-2: 424013101 KEY-3: 032800
                                      PRIMARY                                                         SECONDARY
FEDERAL STANDARD      365 UG/M3 (25 C)  24 HOUR MAXIMUM, 1 PER YEAR         1300 UG/M3 (0 C), 3 HR. MAX.,1 PER YR
STATE STANDARD         60 UG/M3 (25 C)  ANNUAL ARITHMETIC MEAN              0.4 PARTS/MILLION,  3 HR.MAX, 1 PER YEAR


                                                 HOUR

DAY      00        01        02        03        04        05        06        07        08        09        10        11

01
02
03
04
05
06
07
08
09
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28       37        37      9928

NO        1         1         1         0         0         0         0         0         0         0         0         0

MEAN    37.       37.      9928

MAX      37        37      9928
```

(Page 3 of 3)

Figure AHT13-4 - continued.  Procedure AQRPM20 -- program ARPMSTR



```
                  AQDHS-II MASTER FILE SORT PROGRAM  -  DIAGNOSTIC REPORT                       PAGE     1


PROGRAM NAME: ASRMSTR (AQ0140)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


SORT OPTION SPECIFIED:       STND



NUMBER OF INPUT RECORDS READ:            42
NUMBER OF MASTER RECORDS WRITTEN:        42
NUMBER OF DIAGNOSTIC MESSAGES:            0
```

Figure AHT13-5. Procedure AQSRM10 -- program ASRMSTR

```
                        AQDHS-II MASTER FILE DETAILED REPORT PROGRAM  -  DIAGNOSTIC REPORT                              PAGE     1
PROGRAM NAME: ARPMSTR (AQ0230)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

             *** ARPMSTR 003 CONDITIONAL - OPTION CARD MISSING FOR STD ANSWER FILE - ASSUMING MEAN REPORT
        ASSUMED DEFAULT OPTION: MEAN  DISPLAY N > 9997

NUMBER OF OPTION STATEMENTS READ:                          0
NUMBER OF MASTER FILE RECORDS READ:                       42
NUMBER OF REPORT PAGES WRITTEN:                           21
NUMBER OF ERRORS DETECTED:                                 1




------------------------------------------------------------------------------------------------------------------------------




STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                          PAGE     1
                                                          DISPLAY N>9997

AQCR:    136      AGENCY:     COUNTY                                  COLLECTION METH:     GAS BUBBLER                YEAR:  1960
COUNTY:  1780     PROJECT:    COMPLAINT INVESTIGATION                 ANALYSIS METHOD:     CHROMATROPIC ACID
AREA:    0003     PARAMETER:  FORMALDEHYDE                            SAMPLING INTERVAL:   COMPOSITE                  MIN DET:      .5
SITE:    002      UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)          SAROAD KEY:          340003002G0413             UNITS CODE: 01
REIDSVILLE HIGHWAY                            GREENSBORO              KEY-1: 341361780000300 2G04C60 KEY-2: 435029101 KEY-3: 590052

COMPOSITE TYPE:  ANNUAL

PD    RDING    SAMPLES  TIME-CODE

00      2.3     52          9

NO        1

MEAN    2.3

MAX     2.3
```

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Figure AHT13-6. Procedure AQRPM20 -- program ARPMSTR

```
STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                          PAGE    2
                                                         DISPLAY N>9997

AQCR:   169         AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:    HI-VOL                      YEAR:  1965
COUNTY: 0960        PROJECT:    EPISODE MONITORING                     ANALYSIS METHOD:    GRAVIMETRIC                 MONTH:  JANUARY
AREA:   0001        PARAMETER:  TOTAL SUSPENDED PARTICULATE            SAMPLING INTERVAL:  01 HOURS                    MIN DET:       1
SITE:   001         UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)         SAROAD KEY:         340001001A0616              UNITS CODE: 01
YADKIN ROAD                                                            KEY-1: 341690960000l001A06165 KEY-2: 111019101 KEY-3: 010100
                                          PRIMARY                                                 SECONDARY
FEDERAL STANDARD       75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                       60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
STATE STANDARD        250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR                120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR

                                                       HOUR

DAY     00      01      02      03      04      05      06      07      08      09      10      11

01       1       1       2       3       5       8    8003    9021

NO       1       1       1       1       1       1       1       1       0       0       0       0

MEAN    1.      1.      2.      3.      5.      8.    8003    9021

MAX      1       1       2       3       5       8    8003    9021


-------------------------------------------------------------------------------------------------------------------------------------


STATE:  NORTH CAROLINA (34)                    AQDHS-II AIR QUALITY DATA REPORT                                          PAGE    3
                                                         DISPLAY N>9997

AQCR:   169         AGENCY:     EPA - ATMOSPHERIC SURVEILLANCE         COLLECTION METH:    HI-VOL                      YEAR:  1965
COUNTY: 0960        PROJECT:    EPISODE MONITORING                     ANALYSIS METHOD:    GRAVIMETRIC                 MONTH:  JANUARY
AREA:   0001        PARAMETER:  TOTAL SUSPENDED PARTICULATE            SAMPLING INTERVAL:  01 HOURS                    MIN DET:       1
SITE:   001         UNITS:      U-GMS/M3 (25DEG C,1013 M-BARS)         SAROAD KEY:         340001001A0616              UNITS CODE: 01
YADKIN ROAD                                                            KEY-1: 341690960000l001A06165 KEY-2: 111019101 KEY-3: 010100
                                          PRIMARY                                                 SECONDARY
FEDERAL STANDARD       75 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN                       60 UG/M3 (25 C) ANNUAL GEOMETRIC MEAN
STATE STANDARD        250 UG/M3 (25 C) 24 HOUR MAXIMUM, 1 PER YEAR                120 UG/M3 (25 C) 24 HOUR MAXIMUM,1 PER YEAR

                                                       HOUR

DAY     12      13      14      15      16      17      18      19      20      21      22      23     NO.    MEAN     MAX

01                                                                                                       8    2131    9021

NO       0       0       0       0       0       0       0       0       0       0       0       0      8

MEAN                                                                                                          2131

MAX                                                                                                                   9021
```

(Page 2 of 2)

Figure AHT13-6 - continued. Procedure AQRPM20 -- program ARPMSTR

## AQDHS-II AD HOC TEST 14

### Generate Non-Abortive Error Messages of the Site File Maintenance Program

Of the 84 error messages possibly generated by the site file transaction edit program, AEMSITE (AQ0080), only five are abort-level or disaster-level diagnostic messages. All other error messages are exercised in this ad hoc test. The generation of these errors is accomplished in three executions of the procedure AQEMS10, which executes AEMSITE (AQ0080).

A program description of AEMSITE (AQ0080) appears in Test 2.

The run stream for this Ad Hoc test is shown in Figure AHT14-1. Output from the first execution of AEMSITE (AQ0080) appears in Figure AHT14-2. In this step, the bulk of the error messages are generated. Output from the second execution is shown in Figure AHT14-3. Error conditions created in this step include adds of existing keys on the input file, bad option field values, and the creation of an output site file of more than 200 records. Output from the last execution of AEMSTIE (AQ0080) is shown in Figure AHT14-4. The error condition generated in this step is caused by the absence of an option card.

```
//EPALMH14 JOB (A087,MLMH,,LMH,,1,35),TIME=3,PRTY=4,MSGLEVEL=(1,1)
//*
//* THIS TEST GENERATES ALL NON-FATAL DIAGNOSTIC MESSAGES THAT
//* CAN BE PRODUCED BY THE SITE FILE MAINTENANCE PROGRAM
//*
//ADHOC14A EXEC AQEMS10,
//             NEWSITE=BADSITE,
//             PRIMARY=1,
//             SECNDRY=1
//*
//* ALL NON-FATAL DIAGNOSTICS ARE GENERATED IN THIS STEP,
//* EXCEPT SOME INVOLVING THE OPTION CARD, THOSE INVOLVING ACTIONS
//* TO EXISTING KEYS, ONE INVOLVING GENERATING AN OUTPUT SITE
//* FILE OF MORE THAN 200 RECORDS
//*
//SORT.INPUT DD *
AB0001001A01001000100001AABCDEF0001SITE ADDRESS                  01A
01ABCD001A01001000100001AABCDEF0001SITE ADDRESS                  01A
010003ABCA01001000100001AABCDEF0001SITE ADDRESS                  01A
```

(Remainder of transactions omitted)

```
//UPDATE.AQSOLDST DD DUMMY
//UPDATE.OPTIONS DD *
LIST      FLAGW  90
//ADHOC14B EXEC AQEMS10,
//             OLDSITE=BADSITE
//*
//* THIS STEP GENERATES THESE ERRORS:  CODING INVALID OPTION CARD
//* FIELDS, INVALID ACTIONS TO RECORDS WITH KEYS THAT ALREADY EXIST
//* ON THE INPUT FILE, AND PRODUCING AN OUTPUT SITE FILE WITH MORE
//* THAN 200 RECORDS
//*
//SORT.INPUT DD *
010017001A01AB350000000400000NW                                  02C
010019001A0116ABCDEFGH4000000NW                                  02C
010021001A011635000000ABCDEFGNW                                  02C
010026001A01              A1003030N453030                        02C
010027001A01              WABC3030N453030                        02C
010028001A01              W100AB30N453030                        02C
010029001A01              W10030ABN453030                        02C
010030001A01              W1003030A453030                        02C
010031001A01              W1003030NAB3030                        02C
```

(Remainder of transactions omitted)

```
//UPDATE.AQSNEWST DD DUMMY
//UPDATE.OPTIONS DD *
NOLIST    FLAG   50
//ADHOC14C EXEC AQEMS10,
//             OLDSITE=BADSITE
//*
//* THIS STEP GENERATES THE REMAINING NON-FATAL DIAGNOSTIC
//* CONDITION: THE ABSENCE OF AN OPTION CARD
//*
//SORT.INPUT DD *
500001001A01001000100001AABCDEF0001SITE ADDRESS                  01A
//UPDATE.AQSNEWST DD DUMMY
```

Figure AHT14-1. Run Stream

```
                                 AQDHS-II SITE FILF TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                              PAGE  1

PROGRAM NAME: ASRSITE (AQ0160)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:          131
NUMBER OF OUTPUT TRANSACTIONS:         131
```

(Page 1 of 6)

Figure AHT14-2. Procedure AQEMS10 -- program ASRSITE

```
                                           AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                                   DIAGNOSTIC REPORT                                                  PAGE     1

PROGRAM NAME: AEMSITE (A00080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: NOLIST  (DEFAULT),          FLAGW  (USER SPECIFIED), 55 LINES PER PAGE (DEFAULT)

          ***AEMSITE 086 CONDITIONAL - MISSING OR INVALID LIST OPTION - NOLIST USED
          ***AEMSITE 088 CONDITIONAL - MISSING OR INVALID MAXIMUM LINE SPECIFICATION - 55 LINES USED

AB0001001A01001000100001AABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 001 ERROR - COLUMN 1 - INVALID STATE CODE - CARD REJECTED

01ABCD001A01001000100001AABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 002 ERROR - COLUMN 3 - INVALID AREA CODE - CARD REJECTED

010003ABCA01001000100001AABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 003 ERROR - COLUMN 7 - INVALID SITE CODE - CARD REJECTED

010004001 01001000100001AABCDEF0001SITE ADDRFSS                                   01A
          ***AEMSITE 004 ERROR - COLUMN 10 - INVALID AGENCY CODE - CARD REJECTED

010005001AAB001000100001AABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 005 ERROR - COLUMN 11 - INVALID PROJECT CODE - CARD REJECTED

010006001A01ABC000100001AABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 006 ERROR - COLUMN 13 - INVALID AQCR - CARD REJECTED

010007001A01001ABCD00001AABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 007 ERROR - COLUMN 16 - INVALID COUNTY CODE - CARD REJECTED

010008001A010010001ABCDEAABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 008 ERROR - COLUMN 20 - INVALID FIPS CODE - DATA REJECTED

010009001A010010001     AABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 009 WARNING - COLUMN 20 - FIPS CODE SET TO SPACES

010010001A01001000100001 ABCDEF0001SITE ADDRESS                                   01A
          ***AEMSITE 010 WARNING - COLUMN 25 - NAQTS ID SET TO SPACES

010011001A01001000100001A      0001SITE ADDRESS                                   01A
          ***AEMSITE 011 WARNING - COLUMN 26 - AQMA CODE SET TO SPACES

010012001A01001000100001AABCDEF    SITE ADDRESS                                   01A
          ***AEMSITE 012 WARNING - COLUMN 32 - SMSA CODE SET TO SPACES

010013001A01001000100001AABCDEF0001                                               01A
          ***AEMSITE 013 ERROR - COLUMN 36 - SITE ADDRESS MANDATORY - CARD REJECTED

010014001A01001000100001AABCDEF0001SITE ADDRESS                                   ABA
          ***AEMSITE 014 ERROR - COLUMN 78 - INVALID CARD TYPE - CARD REJECTED
```

(Page 2 of 6)

Figure AHT14-2 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                             AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                                   DIAGNOSTIC REPORT                                                          PAGE      2

010015001A0100100010000lAABCDEF0001SITE ADDRESS                                01B
          ***AEMSITE 015 ERROR - COLUMN 80 - INVALID ACTION CODE - CARD REJECTED

010016001A01AB350000004500000
                                                                              02A
          ***AEMSITE 017 ERROR - COLUMN 13 - INVALID UTM ZONE - DATA REJECTED
          ***AEMSITE 016 ERROR - COLUMN 13 - ONE OR MORE UTM FIELDS INVALID - ALL UTM FIELDS REJECTED

010018001A0199350000004500000
                                                                              02A
          ***AEMSITE 018 CONDITIONAL - COLUMN 13 - UTM ZONE OUT OF RANGE - DATA ACCEPTED
          ***AEMSITE 024 ERROR - COLUMN 30 - SECTOR MUST BE DEFINED WHEN UTM IS USED

010020001A011699999999994500000
                                                                              02A
          ***AEMSITE 020 CONDITIONAL - COLUMN 15 - UTM EASTING COORDINATE OUT OF RANGE - DATA ACCEPTED
          ***AEMSITE 024 ERROR - COLUMN 30 - SECTOR MUST BE DEFINED WHEN UTM IS USED

010025001A01                 A0010101N010101                                  02A
          ***AEMSITE 023 ERROR - COLUMN 30 - INVALID SECTOR CODE - DATA REJECTED
          ***AEMSITE 026 ERROR - COLUMN 32 - INVALID E/W HEMISPHERE - DATA REJECTED
          ***AEMSITE 029 ERROR - COLUMN 38 - INVALID LONGITUDE SECONDS - DATA REJECTED
          ***AEMSITE 030 ERROR - COLUMN 40 - INVALID N/S HEMISPHERE - DATA REJECTED
          ***AEMSITE 033 ERROR - COLUMN 45 - INVALID LATITUDE SECONDS - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED
010034001A01                                  ABC                             02A
          ***AEMSITE 034 ERROR - COLUMN 47 - INVALID ELEVATION ABOVE SEA LEVEL - DATA REJECTED
010035001A01                                     MMDDYY                       02A
          ***AEMSITE 035 ERROR - COLUMN 50 - INVALID COMMENCEMENT DATE - DATA REJECTED
010036001A01                                           MMDDYY                 02A
          ***AEMSITE 036 ERROR - COLUMN 56 - INVALID EPA EVALUATION DATE - DATA REJECTED
010037001A01                                                 0                02A
          ***AEMSITE 037 ERROR - COLUMN 62 - INVALID EVALUATING AGENCY TYPE - DATA REJECTED
010038001A01                                                  MMDDYY          02A
          ***AEMSITE 038 ERROR - COLUMN 63 - INVALID EPA AUDIT DATE - DATA REJECTED
010039001A01                                                        0         02A
          ***AEMSITE 039 ERROR - COLUMN 69 - INVALID AUDITING AGENCY TYPE - DATA REJECTED
010040001A01                                                         MMDDYY  02A
          ***AEMSITE 040 ERROR - COLUMN 70 - INVALID TERMINATION DATE - DATA REJECTED
010041001A01                       ABC                                        03A
          ***AEMSITE 041 ERROR - COLUMN 36 - INVALID DISTANCE FROM CENTER CITY - DATA REJECTED
010042001A01                          ABCDF                                   03A
          ***AEMSITE 042 ERROR - COLUMN 39 - CITY POPULATION SHOULD BE NUMERIC - DATA REJECTED
```

(Page 3 of 6)

Figure AHT14-2 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                             AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                                    DIAGNOSTIC REPORT                                                        PAGE      3

010043001A01                                ABCDE                             03A
          ***AEMSITE 043 ERROR - COLUMN 44 - AQCR POPULATION SHOULD BE NUMERIC - DATA REJECTED

010044001A01                                     ABCDEF                       03A
          ***AEMSITE 044 ERROR - COLUMN 49 - INVALID DOMINANT SOURCE OF INFLUENCE - DATA REJECTED

010045001A01                                           A                      03A
          ***AEMSITE 045 ERROR - COLUMN 55 - INVALID MEASUREMENT SCALE - DATA REJECTED

010046001A01                                            A                     03A
          ***AEMSITE 046 ERROR - COLUMN 56 - INVALID LAND USE CODE - DATA REJECTED

010047001A01                                             A                    03A
          ***AEMSITE 047 ERROR - COLUMN 57 - INVALID LOCATION CODE - DATA REJECTED

010048001A01                                              ABCD                03A
          ***AEMSITE 048 ERROR - COLUMN 58 - INVALID DISTANCE FROM NEAREST ROAD - DATA REJECTED

010049001A01                                                  ABC             03A
          ***AEMSITE 049 ERROR - COLUMN 62 - INVALID TRAFFIC FLOW ESTIMATE - DATA REJECTED

010050001A01                                                     7            03A
          ***AEMSITE 050 ERROR - COLUMN 65 - INVALID TYPE OF ROADWAY CODE - DATA REJECTED

010051001A01                                                             X    04A
          ***AEMSITE 051 ERROR - COLUMN 73 - INVALID EPA REGION - DATA REJECTED

010052001A01                                                              09  04A
          ***AEMSITE 052 ERROR - COLUMN 74 - INVALID TIME ZONE - DATA REJECTED

010053001A01                                                                1504A
          ***AEMSITE 053 ERROR - COLUMN 76 - INVALID STATION TYPE - DATA REJECTED

010054001A01                X                                                 05A
          ***AEMSITE 054 ERROR - COLUMN 28 - VALID ENTRY IS EITHER Y OR N - DATA REJECTED

010055001A01NMMDDYY                                                           05A
          ***AEMSITE 055 ERROR - COLUMN 14 - DATE SITING CRITERIA WILL BE MET INVALID - COLS 13-19 REJECTED

010056001A01Y010179                                                           05A
          ***AEMSITE 056 ERROR - COLUMN 14 - DATE SITING CRITERIA WILL BE MET SHOULD BE BLANK - BLANKS ASSUMED

010057001A01        NMMDDYY                                                   05A
          ***AEMSITE 057 ERROR - COLUMN 22 - DATE REF/EQU METHOD WILL BE USED INVALID - COLS 21-27 REJECTED

010058001A01        Y010179                                                   05A
          ***AEMSITE 058 ERROR - COLUMN 22 - DATE REF/EQU METHOD WILL BE USED SHOULD BE BLANK - BLANKS ASSUMED

010059001A01                         F9197395957                              06A
          ***AEMSITE 059 ERROR - COLUMN 38 - ENTER X IF PHONE IS FTS - DATA REJECTED
```

(Page 4 of 6)

Figure AHT14-2 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                            AQDHS-II SITE FILE MAINTENANCE PROGRAM                                     PAGE    4
                                                      DIAGNOSTIC REPORT

010060001A01                           ABC7395957                              06A
          ***AEMSITE 060 ERROR - COLUMN 39 - INVALID CONTACT AREA CODE - DATA REJECTED

010061001A01                           919ABCDEFG                              06A
          ***AEMSITE 061 ERROR - COLUMN 42 - INVALID CONTACT PHONE NUMBER - DATA REJECTED

010062001A01                                                                   11A
          ***AEMSITE 062 ERROR - NO VALID PARAMETER GIVEN - CARD REJECTED

010063001A01ABCDE0111231231790001                                              11A
          ***AEMSITE 063 ERROR - COLUMN 13 - INVALID PARAMETER CODE - GROUP 1 DATA REJECTED

010064001A01                      12345AB11231231790001                        11A
          ***AEMSITE 064 ERROR - COLUMN 39 - INVALID METHOD CODE - GROUP 2 DATA REJECTED

010065001A01                                           1234501 1231231790001  11A
          ***AEMSITE 065 WARNING - COLUMN 62 - SLAMS/NAMS ID SET TO SPACE  .

010066001A011234501X                                                           11A
          ***AEMSITE 066 ERROR - COLUMN 20 - INVALID SLAMS/NAMS ID - DATA REJECTED

010067001A0112345011XXX                                                        11A
          ***AEMSITE 067 ERROR - COLUMN 21 - INVALID EQUIPMENT CODE - DATA REJECTED

010068001A0112345011123MMDDYY                                                  11A
          ***AEMSITE 068 ERROR - COLUMN 24 - INVALID CALIBRATION DATE - DATA REJECTED

010069001A0112345011123123179XXX                                               11A
          ***AEMSITE 069 ERROR - COLUMN 30 - INVALID INLET PROBE HEIGHT - DATA REJECTED

010071001A011234501123179001                                                   11A
          ***AEMSITE 068 ERROR - COLUMN 24 - INVALID CALIBRATION DATE - DATA REJECTED

010072001A0100001011123123179                                                  11C
          ***AEMSITE 072 ERROR - COLUMN 13 - PARM KEY HAS NO MATCH ON EXISTING RECORD - DELETE/CHANGE IGNORED

010073001A0100001011123123179                                                  11C
          ***AEMSITE 073 ERROR - NO PARAMETERS FOR THIS SITE RECORD ON FILE - DELETE/CHANGE IGNORED

010074001A01                                   001                             02A
          ***AEMSITE 074 ERROR - MISSING OR INVALID ADD-1 CARD - CARD REJECTED

010075001A0100100010001AABCDEF0001SITE ADDRESS                                 01A
          ***AEMSITE 075 ERROR - DUPLICATE ADD CARD - CARD REJECTED

010077001A01                                                                   01D
          ***AEMSITE 077 ERROR - TRANSACTION HAS NO MATCH ON SITE FILE - CARD REJECTED

010079001A0100004011              00005011              00006011               11A
          ***AEMSITE 079 ERROR - 20 PARAMETERS CURRENTLY ON FILE - PARAMETER REJECTED
```

(Page 5 of 6)

Figure AHT14-2 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                   AQDMS-II SITE FILE MAINTENANCE PROGRAM
                                           DIAGNOSTIC REPORT                                          PAGE     5

NUMBER OF INPUT TRANSACTIONS:            131
NUMBER OF INPUT SITE FILE RECORDS:         0
NUMBFR OF OUTPUT SITE FILE RECORDS:       67
NUMBER OF SITES CHANGED:                   0
NUMBER OF SITES ADDED:                    67
NUMBER OF SITES DELETED:                   0
NUMBER OF WARNING MESSAGES:                5
NUMBER OF CONDITIONAL MESSAGES:            4
NUMBER OF ERROR MESSAGES:                 63
NUMBER OF ABORT MESSAGES:                  0
NUMBER OF DISASTER MESSAGES:               0

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

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Figure AHT14-2 - continued. Procedure AQEMS10 -- program AEMSITE

```
                    AQDHS-II SITE FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                      PAGE  1

PROGRAM NAME: ASRSITE (AQ0160)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:        160
NUMBER OF OUTPUT TRANSACTIONS:       160
```

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Figure AHT14-3. Procedure AQEMS10 -- program ASRSITE

```
                                        AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                               DIAGNOSTIC REPORT                                                 PAGE    1

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: NOLIST  (USER SPECIFIED), NOFLAGW  (DEFAULT),        50 LINES PER PAGE (USER SPECIFIED)

          ***AEMSITE 087 CONDITIONAL - MISSING OR INVALID FLAGW OPTION - NOFLAGW USE

010017001A01AB350000004000000NW                                                     02C
          ***AEMSITE 017 ERROR - COLUMN 13 - INVALID UTM ZONE - DATA REJECTED
          ***AEMSITE 016 ERROR - COLUMN 13 - ONE OR MORE UTM FIELDS INVALID - ALL UTM FIELDS REJECTED

010019001A0116ABCDEFGH4000000NW                                                     02C
          ***AEMSITE 019 ERROR - COLUMN 15 - INVALID EASTING COORDINATE - DATA REJECTED
          ***AEMSITE 016 ERROR - COLUMN 13 - ONE OR MORE UTM FIELDS INVALID - ALL UTM FIELDS REJECTED

010021001A011635000000ABCDEFGNW                                                     02C
          ***AEMSITE 021 ERROR - COLUMN 23 - INVALID NORTHING COORDINATE - DATA REJECTED
          ***AEMSITE 016 ERROR - COLUMN 13 - ONE OR MORE UTM FIELDS INVALID - ALL UTM FIELDS REJECTED

010026001A01                    A1003030N453030                                     02C
          ***AEMSITE 026 ERROR - COLUMN 32 - INVALID E/W HEMISPHERE - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010027001A01                    WABC3030N453030                                     02C
          ***AEMSITE 027 ERROR - COLUMN 33 - INVALID LONGITUDE DEGREES - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010028001A01                    W100AB30N453030                                     02C
          ***AEMSITE 028 ERROR - COLUMN 36 - INVALID LONGITUDE MINUTES - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010029001A01                    W10030ABN453030                                     02C
          ***AEMSITE 029 ERROR - COLUMN 38 - INVALID LONGITUDE SECONDS - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010030001A01                    W1003030A453030                                     02C
          ***AEMSITE 030 ERROR - COLUMN 40 - INVALID N/S HEMISPHERE - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010031001A01                    W1003030NAB3030                                     02C
          ***AEMSITE 031 ERROR - COLUMN 41 - INVALID LATITUDE DEGREES - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010032001A01                    W1003030N45AB30                                     02C
          ***AEMSITE 032 ERROR - COLUMN 43 - INVALID LATITUDE MINUTES - DATA REJECTED
```

(Page 2 of 3)

Figure AHT14-3 - continued. Procedure AQEMS10 -- program AEMSITE

```
                                              AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                                          DIAGNOSTIC REPORT                                                    PAGE     2

          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010033001A01                      W1003030N4530AB                                         02C
          ***AEMSITE 033 ERROR - COLUMN 45 - INVALID LATITUDE SECONDS - DATA REJECTED
          ***AEMSITE 025 ERROR - COLUMN 32 - ONE OR MORE GEOGRAPHIC COORDINATES INVALID - ALL REJECTED

010070001A010010001                                                                       01D
          ***AEMSITE 070 ERROR - COLUMNS 13 THRU 77 OF TYPE 01 DELETE CARD MUST BE BLANK - CARD REJECTED

010071001A0112345011                                                                      11A
          ***AEMSITE 071 ERROR - COLUMN 13 - ADD NOT ALLOWED FOR PARAMETER ON FILE - PARAMETER REJECTED

010076001A01001000100001AABCDEF0001SITE ADDRESS                                           01A
          ***AEMSITE 076 ERROR - ADD TRANSACTION NOT ALLOWED FOR RECORD ON SITE FILE - CARD REJECTED

010078001A01                                                                              02D
          ***AEMSITE 078 ERROR - DELETE ACTION VALID ON TYPE 1 OR TYPE 11 CARD ONLY - CARD REJECTED

020145001A01001000100001AABCDEF0001SITE ADDRESS                                           01A
          ***AEMSITE 085 CONDITIONAL - NEW SITE FILE HAS MORE THAN 200 RECORDS


NUMBER OF INPUT TRANSACTIONS:              160
NUMBER OF INPUT SITE FILE RECORDS:          67
NUMBER OF OUTPUT SITE FILE RECORDS:        212
NUMBER OF SITES CHANGED:                     3
NUMBER OF SITES ADDED:                     145
NUMBER OF SITES DELETED:                     0
NUMBER OF WARNING MESSAGES:                  0
NUMBER OF CONDITIONAL MESSAGES:              2
NUMBER OF ERROR MESSAGES:                   26
NUMBER OF ABORT MESSAGES:                    0
NUMBER OF DISASTER MESSAGES:                 0

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

(Page 3 of 3)

Figure AHT14-3 - continued. Procedure AQEMS10 -- program AEMSITE

```
                        AQDMS-II SITE FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                        PAGE  1

PROGRAM NAME: ASRSITE (AQ0160)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:          1
NUMBER OF OUTPUT TRANSACTIONS:         1
```

(Page 1 of 2)

Figure AHT14-4. Procedure AQEMS10 -- program ASRSITE

```
                                   AQDHS-II SITE FILE MAINTENANCE PROGRAM
                                             DIAGNOSTIC REPORT                                              PAGE     1

PROGRAM NAME: AEMSITE (AQ0080)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: NOLIST  (DEFAULT),        NOFLAGW  (DEFAULT),        55 LINES PER PAGE (DEFAULT)

         ***AEMSITE 089 CONDITIONAL - NO OPTION CARD - DEFAULT OF NOLIST, NOFLAGW, 55 LINES USED


NUMBER OF INPUT TRANSACTIONS:             1
NUMBER OF INPUT SITE FILE RECORDS:       67
NUMBER OF OUTPUT SITE FILE RECORDS:      68
NUMBER OF SITES CHANGED:                  0
NUMBER OF SITES ADDED:                    1
NUMBER OF SITES DELETED:                  0
NUMBER OF WARNING MESSAGES:               0
NUMBER OF CONDITIONAL MESSAGES:           1
NUMBER OF ERROR MESSAGES:                 0
NUMBER OF ABORT MESSAGES:                 0
NUMBER OF DISASTER MESSAGES:              0
```

(Page 2 of 2)

Figure AHT14-4 - continued. Procedure AQEMS10 -- program AEMSITE

## AQDHS-II AD HOC TEST 15

## Produce a Violations of Standards Report from a Master File with Expanded Ozone Data

This test examines a master file with more ozone data than that in Test 27 to determine violations of the ozone standards. It also demonstrates the use of the option cards for the violations of standards report program. In the test, the master file used in Test 27 is first updated with a large number of ozone transactions, using the master file edit maintenance procedure AQEMM10. Then the procedure AQRPM50 is executed to produce the violations of standards report.

All programs executed by the procedure AQEMM10 are described in Test 5. The violations of standards report program, ARPVSTD (AQ0350), is described in Test 27.

Figure AHT15-1 lists the JCL in the run stream. The first step of the job updates the master file, AQMST04T (created and stored on disk in Test 26). The updated file is named TEMPOZON and is given a disposition of 'NEW,PASS'. Output from this step is shown in Figure AHT15-2. The second step of the job produces the violations report. Input files to this step include the sorted site file, AQSTESRT, created in Test 6; the auxiliary files AQPARM01 and AQSTND01 created in Tests 1 and 3; and the master file, TEMPOZON, created in the preceding step.

Also included as input to the second step are a set of option cards. The first option card in the stream (marked by 'OPT') is the program option card. It indicates that 50 lines per page is the maximum and that no detail lines are to be suppressed. The other option cards in the file are peak season specification cards. The first field in each card is the report parameter code field. The only valid code for this report is '44201'. The second field in each peak season card is the site key field. Note those site keys that are less than the full 19 characters; they represent geographical areas larger than a single site. The last two fields of each card (each 4 characters long) are the starting and ending dates of the peak season. Output from the second step is shown in Figure AHT15-3.

```
//EPALMH15 JOB (AQA7,MLMH,,LMH,,1,35),TIME=3,PRTY=4,MSGLEVEL=(1,1)
//*
//* UPDATE THE MASTER FILE, AQMST04T, WITH ADDITIONAL
//* OZONE DATA AND PRODUCE FROM THE UPDATED FILE
//* A VIOLATIONS OF STANDARDS REPORT
//*
//AQHUC15A EXEC AQEMM10,
//             OLDMSTR=AQMST04T,
//             NEWMSTR=TEMPOZON,
//             PARMFIL=AQPARM01,
//             SITEFIL=AQSITE01,
//             WORKSPC='300,50',
//             PRIMARY=100,
//             SECNDRY=30,
//             DISP='NEW,PASS'
//*
//* PRESORT AND EDIT THE AQDHS-II OZONE TRANSACTIONS,
//* SORT THE INTERNAL TRANSACTIONS,
//* AND CREATE AN UPDATED, TEMPORARY MASTER FILE
//*
//PRESORT.INPUT DD *
1373000127F021750713084420111074                 587 602 755 704                2
1373000127F021750713164420111074 612 520 449 434 306 002 061 028                2
1373000127F021750714004420111074 051 000 000 000 000 000 000 041                2
1373000127F021750714084420111074 255 408 663 842                                2
```

(Remainder of transactions omitted)

```
/*
//AQHUC15B EXEC AQRPM50,
//             MSTRFIL=TEMPOZON,
//             SITESRT=AQSTESRT,
//             PARMFIL=AQPARM01,
//             STANFIL=AQSTND01
//*
//* PRODUCE THE VIOLATIONS REPORT FROM THE UPDATED
//* MASTER FILE, TEMPOZON; USE THE SORTED SITE FILE
//* CREATED AND CATALOGED IN TEST 27, AQSTESRT;
//* SPECIFY PROGRAM OPTIONS OF 60 LINES PER PAGE AND
//* 'NOSUPPRESS'; INCLUDE A NUMBER OF PEAK SEASON
//* SPECIFICATION CARDS
//*
//REPORT.OPTIONS DD *
OPT 60 NOSUPPRESS
44201 3718630202240      0510 1001
44211 37                 0510 1212
44201 3718630203000127   0710 0830
44201 37186              0630 0101
44201 37186ABCD3000ABCZAB 0631 1301
ABCDE 37   12345678123A12 AB01 01CD
44201 3718630203000998A  0430 1001
44201 3718630203020      0801 0831
44201   A C    1  4   A   0050 0229
44201 3718630203140992A05 0901 0204
44201 3718630203000999A06   01 12
44201 3718630203000      0430 1030
44201 3718630203140992   0808 0808
44201 3718630203140992A05 0801 0901
```

Figure AHT15-1. Run Stream

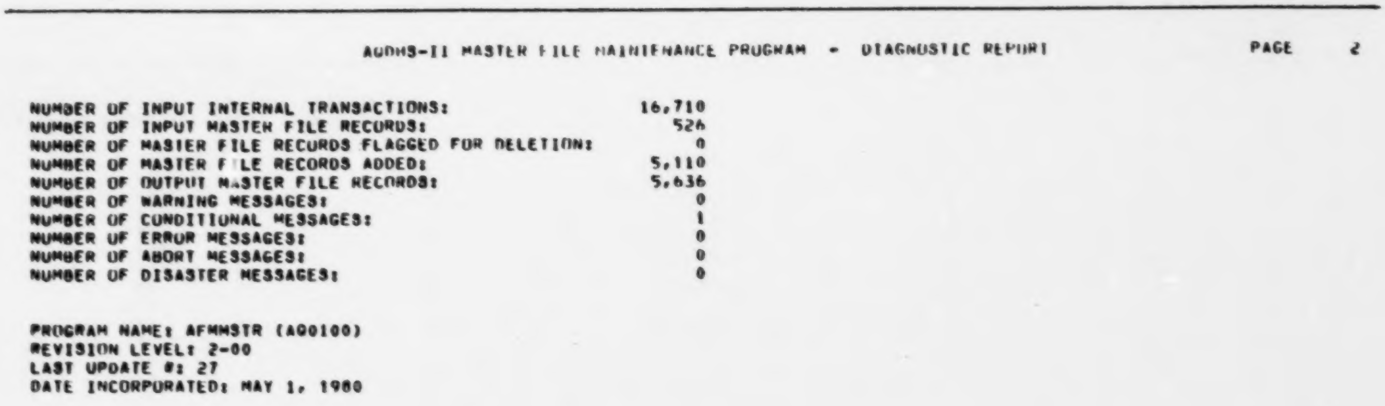
```
                    AQDHS-II MASTER FILE TRANSACTION EDIT PROGRAM  -  DIAGNOSTIC REPORT              PAGE     1

PROGRAM NAME: AEDMSTR (AQ0060)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPTIONS IN EFFECT: DEFAULT (NULIST NOFLAGW)


INPUT TRANSACTIONS               ERRORS
          *** AEDMSTR 046 CONDITIONAL - MISSING OR INVALID OPTION CARD - DEFAULT OPTIONS USED


NUMBER OF TRANSACTIONS READ:                     5,864
NUMBER OF TRANSACTIONS PASSING EDIT CRITERIA:    5,864
NUMBER OF INTERNAL TRANSACTIONS CREATED:        16,710
NUMBER OF WARNING MESSAGES:                          0
NUMBER OF CONDITIONAL MESSAGES:                      1
NUMBER OF ERROR MESSAGES:                            0
NUMBER OF ABORT MESSAGES:                            0



----------------------------------------------------------------------------------------------------------



                    AQDHS-II MASTER FILE TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT


PROGRAM NAME: ASRTRAN (AQ0370)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980


NUMBER OF INPUT TRANSACTIONS:              5,864
NUMBER OF OUTPUT TRANSACTIONS:             5,864
NUMBER OF INPUT FORM 3 TRANSACTIONS:           0
NUMBER OF OUTPUT FORM 3 TRANSACTIONS:          0
```

Figure AHT15-2. Procedure AQEMM10 - Programs ASRTRAN and AEDMSTR

```
                  AQDHS-II MASTER FILE INTERNAL TRANSACTION SORT PROGRAM  -  DIAGNOSTIC REPORT                     PAGE  1

PROGRAM NAME: ASRINTR (AQ0130)
REVISION LEVEL: 1-00
LAST UPDATE #: 24
DATE INCORPORATED: OCTOBER 31, 1978


NUMBER OF INPUT INTERNAL TRANSACTIONS:      16,710
NUMBER OF OUTPUT INTERNAL TRANSACTIONS:     16,710


------------------------------------------------------------------------------------------------------------------


                     AQDHS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                 PAGE     1
PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

                  TABLE # 1
      SIGNED                      LAST DIGIT
      NUMBER                      OF NUMBER
                                  PRINTED
----------------------------------------
           -9                            R
           -8                            Q
           -7                            P
           -6                            O
           -5                            N
           -4                            M
           -3                            L
           -2                            K
           -1                            J
           -0
           +0
           +1                            A
           +2                            B
           +3                            C
           +4                            D
           +5                            E
           +6                            F
           +7                            G
           +8                            H
           +9                            I

THIS TABLE SHOWS THE PRINT CHARACTERS
FOR THE LAST DIGIT OF SIGNED DATA VALUES
WHICH MAY APPEAR IN THE AQDHS-II
MASTER FILE MAINTENANCE OUTPUT REPORTS

OPTIONS IN EFFECT:  DEFAULT (NOLIST NUFLAGW)

      *** AFMMSTR 005 CONDITIONAL - MISSING OR INVALID CARD - DEFAULT OPTIONS (NOLIST NOFLAGW) USED
```

(Page 1 of 2)

Figure AHT15-2 - continued.  Procedure AQEMM1C - Programs ASRINTR and AFMMSTR



```
                         AUDMS-II MASTER FILE MAINTENANCE PROGRAM  -  DIAGNOSTIC REPORT                        PAGE     2

NUMBER OF INPUT INTERNAL TRANSACTIONS:                   16,710
NUMBER OF INPUT MASTER FILE RECORDS:                        526
NUMBER OF MASTER FILE RECORDS FLAGGED FOR DELETION:           0
NUMBER OF MASTER FILE RECORDS ADDED:                      5,110
NUMBER OF OUTPUT MASTER FILE RECORDS:                     5,636
NUMBER OF WARNING MESSAGES:                                   0
NUMBER OF CONDITIONAL MESSAGES:                               1
NUMBER OF ERROR MESSAGES:                                     0
NUMBER OF ABORT MESSAGES:                                     0
NUMBER OF DISASTER MESSAGES:                                  0

PROGRAM NAME: AFMMSTR (AQ0100)
REVISION LEVEL: 2-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980
```

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Figure AHT15-2 - continued. Procedure AQEMM10 -- programs AFMMSTR

```
                         AQDMS-II VIOLATION OF STANDARDS PROGRAM DIAGNOSTIC REPORT                            PAGE     1
PROGRAM NAME: ARPVSTD (AQ0350)
REVISION LEVEL: 1-00
LAST UPDATE #: 27
DATE INCORPORATED: MAY 1, 1980

OPT 60 NOSUPPRESS
        *** ARPVSTD 013 CONDITIONAL - COLUMN 19: MISSING OR INVALID FLAGM OPTION -  NOFLAGM  USED

USER-SPECIFIED PROGRAM OPTIONS ARE 60 LINES PER PAGE, NOSUPPRESS, AND NOFLAGM

ABCDE 37   12345678123A12 AB01 01CD
        *** ARPVSTD 014 ERROR - COLUMN 1: PEAK SEASON PARAMETER CODE NONNUMERIC - CARD REJECTED
        *** ARPVSTD 022 ERROR - NONBLANK CHARACTERS REOCCUR AFTER BLANK FIELDS IN PEAK SEASON SITE KEY
        *** ARPVSTD 023 ERROR - COLUMN 27: PEAK SEASON STARTING DATE INVALID - CARD REJECTED
        *** ARPVSTD 024 ERROR - COLUMN 32: PEAK SEASON ENDING DATE INVALID - CARD REJECTED
        *** ARPVSTD 025 ERROR- COLUMN 1: PEAK SEASON PARAMETER CODE NOT SELECTED FOR REPORT - CARD REJECTED

44201   A C    1  4   A    0050 0229
        *** ARPVSTD 015 ERROR - COLUMN 7: PEAK SEASON STATE CODE NONNUMERIC OR GREATER THAN 55 - CARD REJECTED
        *** ARPVSTD 016 ERROR - COLUMN 9: PEAK SEASON AQCR CODE NONNUMERIC OR GREATER THAN 247 - CARD REJECTED
        *** ARPVSTD 018 ERROR - COLUMN 16: PEAK SEASON AREA CODE NONNUMERIC - CARD REJECTED
        *** ARPVSTD 022 ERROR - NONBLANK CHARACTERS REOCCUR AFTER BLANK FIELDS IN PEAK SEASON SITE KEY
        *** ARPVSTD 023 ERROR - COLUMN 27: PEAK SEASON STARTING DATE INVALID - CARD REJECTED
        *** ARPVSTD 024 ERROR - COLUMN 32: PEAK SEASON ENDING DATE INVALID - CARD REJECTED

44201 37186ABCD3000ABCZAB 0631 1301
        *** ARPVSTD 017 ERROR - COLUMN 12: PEAK SEASON COUNTY CODE NONNUMERIC - CARD REJECTED
        *** ARPVSTD 019 ERROR - COLUMN 20: PEAK SEASON SITE CODE NONNUMERIC - CARD REJECTED
        *** ARPVSTD 021 ERROR - COLUMN 24: PEAK SEASON PROJECT CODE NONNUMERIC - CARD REJECTED
        *** ARPVSTD 023 ERROR - COLUMN 27: PEAK SEASON STARTING DATE INVALID - CARD REJECTED
        *** ARPVSTD 024 ERROR - COLUMN 32: PEAK SEASON ENDING DATE INVALID - CARD REJECTED

44201 3718630202240       0510 1001
        *** ARPVSTD 007 ERROR - PEAK SEASON SITE KEY NOT FOUND IN MASTER FILE - CARD REJECTED

44201 3718630203000999A06   01 12
        *** ARPVSTD 023 ERROR - COLUMN 27: PEAK SEASON STARTING DATE INVALID - CARD REJECTED
        *** ARPVSTD 024 ERROR - COLUMN 32: PEAK SEASON ENDING DATE INVALID - CARD REJECTED

44201 3718630203140992A05 0901 0204
        *** ARPVSTD 027 ERROR - COLUMN 7: PEAK SEASON SITE KEY ALREADY FOUND ON OTHER CARD - CARD REJECTED

44211 37                  0510 1212
        *** ARPVSTD 025 ERROR- COLUMN 1: PEAK SEASON PARAMETER CODE NOT SELECTED FOR REPORT - CARD REJECTED


NUMBER OF PARAMETER STANDARDS RECORDS READ:       43
NUMBER OF PARAMETER RECORDS READ:                 89
NUMBER OF SITE RECORDS READ:                      59
NUMBER OF MASTER RECORDS READ:                 5,636
NUMBER OF PEAK SEASON CARDS READ:                 14
NUMBER OF VALID PEAK PERIOD CARDS:                 7
NUMBER OF WARNING MESSAGES:                       90
NUMBER OF CONDITIONAL MESSAGES:                    1
NUMBER OF ERROR MESSAGES:                         21
NUMBER OF ABORT MESSAGES:                          0
```

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Figure AHT15-3. Procedure AQRPM50 -- program ARPVSTD

```
                    AQDHS-II VIOLATION OF STANDARDS PROGRAM - PEAK POLLUTION POTENTIAL SEASON REPORT          PAGE    1
                                                PEAK SEASON SPECIFICATIONS IN EFFECT

PARAMETER      SITE KEY        STARTING DATE  ENDING DATE


  44201   37186                     06/30          01/01
  44201   3718630203000             04/30          10/30
  44201   3718630203000127          07/10          08/30
  44201   3718630203000998A         04/30          10/01
  44201   3718630203020             08/01          08/31
  44201   3718630203140992          08/08          08/08
  44201   3718630203140992A05       08/01          09/01

NUMBER OF PEAK SEASON CARDS READ:                   14
NUMBER OF VALID PEAK PERIOD CARDS:                   7
```

(Page 2 of 3)

Figure AHT15-3 - continued. Procedure AQRPM50 -- program ARPVSTD

```
                                  AQDHS-II VIOLATIONS OF STANDARDS REPORT                                                   PAGE
STATE: OKLAHOMA                   POLLUTANT ID: 44201      POLLUTANT: OZONE
STANDARD: EXPECTED NUMBER OF DAYS PER CALENDAR YEAR WITH MAXIMUM HRLY AVERAGE CONCENTRATIONS ABOVE 0.12 PPM MUST NOT EXCEED 1

ST AQCR CNTY AREA SITE AGN PROJ  ADDRESS                                 CITY
37 186  3020 3000 127   F   02   MOHAWK BLVD, TULSA, TULSA CO.

             NBR VALID   PK PRD                                                                              MAX     DESIGN   EXPCT
      YEAR     DAYS      RDNG %       STATUS          DAILY MAXIMUM HOURLY CONCENTRATIONS ABOVE 0.12         VALUE    VALUE   EXCDNC
      1975      90         98     STANDARD VIOLATED      0.14 (08/02)                                         0.14     0.14     3.0
      1976      90         98     STANDARD VIOLATED      0.14 (08/02)                                         0.14     0.14     2.2
      1977      90         98     STANDARD VIOLATED      0.14 (08/02)                                         0.14     0.14     2.3
=====================================================================================================================================

ST AQCR CNTY AREA SITE AGN PROJ  ADDRESS                                 CITY
37 186  3020 3000 132   F   02   APACHE ST., TULSA, TULSA CO.

             NBR VALID   PK PRD                                                                              MAX     DESIGN   EXPCT
      YEAR     DAYS      RDNG %       STATUS          DAILY MAXIMUM HOURLY CONCENTRATIONS ABOVE 0.12         VALUE    VALUE   EXCDNC
  *** 1975      85         63     STANDARD VIOLATED      0.13 (07/22)     0.13 (07/23)     0.13 (07/24)       0.17     0.17    19.2
                                                         0.17 (07/29)     0.16 (08/02)     0.14 (08/23)
      1976      85         80     STANDARD VIOLATED      0.13 (07/22)     0.13 (07/23)     0.13 (07/24)       0.17     0.17    13.9
                                                         0.17 (07/29)     0.16 (08/02)     0.14 (08/23)
  *** 1977      85         63     STANDARD VIOLATED      0.13 (07/22)     0.13 (07/23)     0.13 (07/24)       0.17     0.17    14.3
                                                         0.17 (07/29)     0.16 (08/02)     0.14 (08/23)
=====================================================================================================================================

ST AQCR CNTY AREA SITE AGN PROJ  ADDRESS                                 CITY
37 186  3020 3000 997   A   05   TULSA PUBLIC HEALTH                     TULSA

             NBR VALID   PK PRD                                                                              MAX     DESIGN   EXPCT
      YEAR     DAYS      RDNG %       STATUS          DAILY MAXIMUM HOURLY CONCENTRATIONS ABOVE 0.12         VALUE    VALUE   EXCDNC
  *** 1975      77         58     ATTAINMT NOT ESTABL NONE                                                    0.10              0.0
      1976      77         76     ATTAINMT NOT ESTABL NONE                                                    0.10              0.0
  *** 1977      77         59     STANDARD ATTAINED   NONE                                                    0.12              0.0
=====================================================================================================================================

ST AQCR CNTY AREA SITE AGN PROJ  ADDRESS                                 CITY
37 186  3020 3000 998   A   05   TULSA POST OFFICE                       TULSA

             NBR VALID   PK PRD                                                                              MAX     DESIGN   EXPCT
      YEAR     DAYS      RDNG %       STATUS          DAILY MAXIMUM HOURLY CONCENTRATIONS ABOVE 0.12         VALUE    VALUE   EXCDNC
  *** 1975      79         52     ATTAINMT NOT ESTABL NONE                                                    0.10              0.0
      1976      79         91     ATTAINMT NOT ESTABL NONE                                                    0.10              0.0
  *** 1977      79         71     STANDARD ATTAINED      0.13 (07/22)                                         0.13              0.9




*** LESS THAN 75% OF DAYS DURING PEAK POLLUTION POTENTIAL SEASON HAVE SUFFICIENT DATA
ALL READINGS EXPRESSED IN PARTS PER MILLION
```

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Figure AHT15-3 - continued. Procedure AQRPM50 -- program ARPVSTD

## APPENDIX A

## CROSS-REFERENCE OF TESTS, PROCEDURES, AND PROGRAMS

| Test | Procedures | Programs |
|---|---|---|
| 1 | AQEMP10 | ASRPARM (AQ0150) |
| | | AEMPARM (AQ0070) |
| | AQRPP10 | ARPPARM (AQ0240) |
| 2 | AQEMS10 | ASRSITE (AQ0160) |
| | | AEMSITE (AQ0080) |
| | AQRPS10 | ARPSITE (AQ0260) |
| 3 | AQEMD10 | ASRSTND (AQ0170) |
| | | AEMSTND (AQ0090) |
| | AQRPD10 | ARPSTND (AQ0250) |
| 4 | AQCVT10 | ACVSARD (AQ0010) |
| 5 | AQEMM10 | ASRTRAN (AQ0370) |
| | | AEDMSTR (AQ0060) |
| | | ASRINTR (AQ0130) |
| | | AFMMSTR (AQ0100) |
| 6 | AQSRS10 | ASRSTFL (AQ0360) |
| | AQRPM20 | ARPMSTR (AQ0230) |
| 7 | AQRPM30 | ARPMSBR (AQ0300) |
| 8 | AQRPM40 | ASRMSTR (AQ0140) |
| | | ARPINVP (AQ0290) |
| 9 | AQRPM35 | ASRMSTR (AQ0140) |
| | | ARPINVS (AQ0280) |
| 10 | AQSRM10 | ASRMSTR (AQ0140) |
| | AQRPM10 | ASTPRLM (AQ0190) |
| | | ASTMSST (AQ0200) |
| | | ARPMSST (AQ0270) |
| 11 | AQRPM45 | ACVANOM (AQ0040) |
| | | ARPANOM (AQ0320) |

| Test | Procedures | Programs |
|---|---|---|
| 12 | AQRPM05 | ARPSARD (AQ0220) |
| 13 | AQRTM10 | ARTLNGP (AQ0110) |
| | | ARTGENR (AQ0120) |
| 14 | AQEMP10 | ASRPARM (AQ0150) |
| | | AEMPARM (AQ0070) |
| 15 | AQEMS10 | ASRSITE (AQ0160) |
| | | AEMSITE (AQ0080) |
| 16 | AQRPP20 | ARPPMEX (AQ0330) |
| 17 | AQRPS20 | ARPSMEX (AQ0340) |
| 18 | AQCVM10 | ACVMFOR (AQ0020) |
| | AQCVP10 | ACVPFOR (AQ0030) |
| 19 | AQMSM20 | AMSARCH (AQ0215) |
| 20 | AQCVM20 | ACVUNIT (AQ0050) |
| 21 | AQRTM10 | ARTLNGP (AQ0110) |
| | | ARTGENR (AQ0120) |
| | AQSTM20 | ASTSLAV (AQ0180) |
| | AQRPM20 | ARPMSTR (AQ0230) |
| 22 | AQRPM25 | ARPDUMP (AQ0310) |
| 23 | AQEDT10 | ASRTRAN (AQ0370) |
| | | AEDMSTR (AQ0060) |
| | AQFMM10 | ASRINTR (AQ0130) |
| | | AFMMSTR (AQ0100) |
| 24 | AQRPM05 | ARPSARD (AQ0220) |
| 25 | AQRPM45 | ACVANOM (AQ0040) |
| | | ARPANOM (AQ0320) |

| Test | Procedures | Programs |
|---|---|---|
| 26 | AQMSM20 | AMSARCH (AQ0215) |
|  | AQMSM10 | AMSMERG (AQ0210) |
| 27 | AQRPM50 | ARPVSTD (AQ0350) |
| Ad Hoc 1 | AQRTM10 | ARTLNGP (AQ0110) |
|  |  | ARTGENR (AQ0120) |
|  | AQRPM05 | ARPSARD (AQ0220) |
| Ad Hoc 2 | AQRTM10 | ARTLNGP (AQ0110) |
|  |  | ARTGENR (AQ0120) |
|  | AQRPM45 | ACVANOM (AQ0040) |
|  |  | ARPANOM (AQ0320) |
| Ad Hoc 3 | AQRTM20 | ARTLNGP (AQ0110) |
|  | AQRTM30 | ARTGENR (AQ0120) |
|  | AQMSM10 | AMSMERG (AQ0210) |
|  | AQRPM40 | ASRMSTR (AQ0140) |
|  |  | ARPINVP (AQ0290) |
| Ad Hoc 4 | AQRTM10 | ARTLNGP (AQ0110) |
|  |  | ARTGENR (AQ0120) |
|  | AQCVM20 | ACVUNIT (AQ0050) |
|  | AQRPM20 | ARPMSTR (AQ0230) |
| Ad Hoc 5 | AQRTM10 | ARTLNGP (AQ0110) |
|  |  | ARTGENR (AQ0120) |
|  | AQSTM20 | ASTSLAV (AQ0180) |
|  | AQSTM20 | ARPMSTR (AQ0230) |
| Ad Hoc 6 | AQRTM10 | ARTLNGP (AQ0110) |
|  |  | ARTGENR (AQ0120) |
|  | AQSRM10 | ASRMSTR (AQ0140) |
|  | AQRPM10 | ASTPRLM (AQ0190) |
|  |  | ASTMSST (AQ0200) |
|  |  | ARPMSST (AQ0270) |
| Ad Hoc 7 | AQRTM10 | ARTLNGP (AQ0110) |
|  |  | ARTGENR (AQ0120) |
|  | AQRPM20 | ARPMSTR (AQ0230) |

| Test | Procedures | Programs |
|---|---|---|
| Ad Hoc 8 | AQRTM10 | ARTLNGP (AQ0110) |
| | | ARTGENR (AQ0120) |
| | AQRPM10 | ASTPRLM (AQ0190) |
| | | ASTMSST (AQ0200) |
| | | ARPMSST (AQ0270) |
| Ad Hoc 9 | AQEDT10 | ASRTRAN (AQ0370) |
| | | AEDMSTR (AQ0060) |
| AD Hoc 10 | AQEDT10 | AEDMSTR (AQ0060) |
| | AQFMM10 | ASRINTR (AQ0130) |
| | | AFMMSTR (AQ0100) |
| Ad Hoc 11 | AQCVT10 | ACVSARD (AQ0010) |
| | AQEMM10 | AEDMSTR (AQ0060) |
| | | ASRINTR (AQ0130) |
| | | AFMMSTR (AQ0100) |
| Ad Hoc 12 | AQRTM10 | ARTLNGP (AQ0110) |
| | | ARTGENR (AQ0120) |
| | AQRPM10 | ASTPRLM (AQ0190) |
| | | ASTMSST (AQ0200) |
| | | ARPMSST (AQ0270) |
| | AQSRM10 | ASRMSTR (AQ0140) |
| Ad Hoc 13 | AQRPM20 | ARPMSTR (AQ0230) |
| | AQSRM10 | ASRMSTR (AQ0140) |
| Ad Hoc 14 | AQEMS10 | ASRSITE (AQ0160) |
| | | AEMSITE (AQ0080) |
| Ad Hoc 15 | AQEMM10 | ASRTRAN (AQ0370) |
| | | AEDMSTR (AQ0060) |
| | | ASRINTR (AQ0130) |
| | | AFMMSTR (AQ0100) |
| | AQRPM50 | ARPVSTD (AQ0350) |

| Procedure | AQDHS-II Tests | AQDHS-II Ad Hoc Tests |
|---|---|---|
| AQCVM10 | 18 | |
| AQCVM20 | 20 | 4 |
| AQCVP10 | 18 | |
| AQCVT10 | 4 | 11 |
| AQEDT10 | 23 | 9, 10 |
| AQEMD10 | 3 | |
| AQEMM10 | 5 | 11,15 |
| AQEMP10 | 1, 14 | |
| AQEMS10 | 2, 15 | 14 |
| AQFMM10 | 23 | 10 |
| AQMSM10 | 26 | 3 |
| AQMSM20 | 19, 26 | |
| AQRPD10 | 3 | |
| AQRPM05 | 12, 24 | 1 |
| AQRPM10 | 10 | 6, 8, 12 |
| AQRPM20 | 6, 21 | 4, 5, 7, 13 |
| AQRPM25 | 22 | |
| AQRPM30 | 7 | |
| AQRPM35 | 9 | |
| AQRPM40 | 8 | 3 |
| AQRPM45 | 11, 25 | 2 |
| AQRPM50 | 27 | 15 |
| AQRPP10 | 1 | |
| AQRPP20 | 16 | |
| AQRPS10 | 2 | |
| AQRPS20 | 17 | |

| Procedure | AQDHS-II Tests | AQDHS-II Ad Hoc Tests |
|---|---|---|
| AQRTM10 | 13, 21 | 1, 2, 4, 5, 6, 7, 8, 12 |
| AQRTM20 | | 3 |
| AQRTM30 | | 3 |
| AQSRM10 | 10 | 6, 12, 13 |
| AQSRS10 | 6 | |
| AQSTM20 | 21 | 5 |

| Program | AQDHS-II Tests | AQDHS-II Ad Hoc Tests |
|---|---|---|
| ACVANOM (AQ0040) | 11, 25 | 2 |
| ACVMFOR (AQ0020) | 18 | |
| ACVPFOR (AQ0030) | 18 | |
| ACVSARD (AQ0010) | 4 | 11 |
| ACVUNIT (AQ0050) | 20 | 4 |
| AEDMSTR (AQ0060) | 5, 23 | 9, 10, 11, 15 |
| AEMPARM (AQ0070) | 1, 14 | |
| AEMSITE (AQ0080) | 2, 15 | 14 |
| AEMSTND (AQ0090) | 3 | |
| AFMMSTR (AQ0100) | 5, 23 | 10, 11, 15 |
| AMSARCH (AQ0215) | 19, 26 | |
| AMSMERG (AQ0210) | 26 | 3 |
| ARPANOM (AQ0320) | 11, 25 | 2 |
| ARPDUMP (AQ0310) | 22 | |
| ARPINVP (AQ0290) | 8 | 3 |
| ARPINVS (AQ0280) | 9 | |
| ARPMSBR (AQ0300) | 7 | |
| ARPMSST (AQ0270) | 10 | 6, 8, 12 |
| ARPMSTR (AQ0230) | 6, 21 | 4, 5, 7, 13 |
| ARPPARM (AQ0240) | 1 | |
| ARPPMEX (AQ0330) | 16 | |
| ARPSARD (AQ0220) | 12, 24 | 1 |
| ARPSITE (AQ0260) | 2 | |
| ARPSMEX (AQ0340) | 17 | |
| ARPSTND (AQ0250) | 3 | |
| ARPVSTD (AQ0350) | 27 | 15 |

| Program | AQDHS-II Tests | AQDHS-II Ad Hoc Tests |
|---|---|---|
| ARTGENR (AQ0120) | 13, 21 | 1, 2, 3, 4, 5, 6, 7, 8, 12 |
| ARTLNGP (AQ0110) | 13, 21 | 1, 2, 3, 4, 5, 6, 7, 8, 12 |
| ASRINTR (AQ0130) | 5, 23 | 10, 11, 15 |
| ASRMSTR (AQ0140) | 8, 9, 10 | 3, 6, 12, 13 |
| ASRPARM (AQ0150) | 1, 14 | |
| ASRSITE (AQ0160) | 2, 15 | 14 |
| ASRSTFL (AQ0360) | 6 | |
| ASRSTND (AQ0170) | 3 | |
| ASRTRAN (AQ0370) | 5,23 | 9, 10, 11,15 |
| ASTMSST (AQ0220) | 10 | 6, 8, 12 |
| ASTPRLM (AQ0190) | 10 | 6, 8, 12 |
| ASTSLAV (AQ0180) | 21 | 5 |

## TECHNICAL REPORT DATA
*(Please read Instructions on the reverse before completing)*

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This manual documents the AQDHS-II test run series and replaces the Air Pollution Training Institute Manual 475, Comprehensive Data Handling System, Volume 2, Air Quality Data Handling System (AQDHS-II).

The test run series is divided into two major areas: basic test runs and ad hoc test runs. The basic test runs exercise each program in AQDHS-II at least once and provide the user with a means of determining whether or not his installation of AQDHS-II has been successful.

The ad hoc test runs further exercise the capabilities of the AQDHS-II programs. The ad hoc test runs also provide the user with examples of how various combinations of AQDHS-II programs may be used to generate certain reports or to accomplish special tasks.

The AQDHS-II User's Guide should be used as a reference in conjunction with this manual. Appendix A of this manual provides a cross-reference of tests, procedures, and programs.

17. KEY WORDS AND DOCUMENT ANALYSIS

| a. DESCRIPTORS | b. IDENTIFIERS/OPEN ENDED TERMS | c. COSATI Field/Group |
|---|---|---|
| Computer Programs | CDHS | |
| Computer Software | AQDHS-II | |
| Data Processing | SAROAD | |
| Air Pollution | Atmospheric Pollution | |
| Data Handling | System Installation | |
| Computer System Programs | System Testing | |
| Data Base Management System | | |
| Distributed Processing | | |

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